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Motivational Highway to the Sexual Risk-Taking Danger-Zone: The Association of Motivational Factors with Sexual Health Decision Making.

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By

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ABSTRACT

The current studies aimed to examine factors that impact sexual health decision-making and processes of condom negotiation among young men and women. Condom negotiation is typically a dyadic process, which leaves it vulnerable to the influence of a host of individual, couple, and situational factors. These factors can push an individual into a sexual risk-taking danger zone, where their ability to make good sexual health decisions for themselves is impaired. In particular, the current studies investigated the associations of sexual arousal, motivation to establish and maintain romantic relationships (relationship motivation), meta-motivational states, and partner familiarity with condom negotiation processes. Study 1 presented participants with an online vignette describing a hypothetical sexual encounter with a new sexual partner and Study 2 incorporated a sexual arousal manipulation before presenting participants with a series of scenarios depicting hypothetical sexual encounters with more and less familiar new partners. Study 1 showed that an individual's meta-motivational state is predictive of particular patterns of response. Participants who were experiencing either a more goal-oriented state or a more conforming state were more risk adverse. Across both studies, a significant effect of sexual arousal was seen; participants who were more sexually aroused responded with greater sexual risk-taking intentions. Relationship motivation was also found to influence sexual risk-taking: participants with higher relationship motivation scores generally reported a belief that engaging in condom-less sex would facilitate relationship development and were concerned that negotiating condom use would detract from building a connection with their partner. However, the effects of relationship motivation were not identical in men and women. Lower sexual risk-taking intentions were seen in sexually aroused men with high relationship motivation, particularly with more hypothetically familiar partners. Whereas women with high relationship

showed increased sexual risk-taking intentions, but only with hypothetical partners who seemed more familiar. The interaction between sexual myopia and relationship motivation in men suggests that high relationship motivated men may attend to different cues when sexually aroused, which impacts their sexual risk-taking intentions. The results of the current studies suggest that people highly concerned with maintaining a romantic relationship engage in more impression management. Thus, such individuals could be at increased risk for negative sexual health outcomes, due to increased sexual risk-taking in the service of building intimacy; though the extent of this effect can depend on gender and the experience of sexual arousal.

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INTRODUCTION

Background

Young adults engage in any number of risk-taking behaviours, including risky sexual behaviours that involve having unprotected sex with multiple different partners (Downing-Matibag & Geisinger, 2009; LaBrie et al., 2014; Prestage, Jin, Grulich, de Wit, & Zablotska, 2012; Staras, Livingston, Maldonado-Molina, & Komro, 2013). Unprotected sexual contact accounts for the majority of new sexually transmitted infections (STIs), including Human Immunodeficiency Virus (HIV) (Centers for Disease Control and Prevention, 2016; Public Health Agency of Canada, 2015). STIs alone pose a considerable and increasing health threat among young people (Centers for Disease Control and Prevention, 2016; Kerry, Nightingale, & Oakeshott, 2016; Milhausen et al., 2013), as untreated infections can increase an individual's risk of HIV infection and lead to reproductive health complications (Marrazzo et al., 2014; Stamm, 2008). STIs, like HIV, remain a significant health concern among men and women (Centers for Disease Control and Prevention, 2016; Gahagan et al., 2013; Public Health Agency of Canada, 2015); thus, reducing unprotected intercourse among women and men at risk for HIV and other STIs is a significant health priority.

Despite the fact that the majority of young adults in North American have some degree of knowledge about the modes of transmission of STIs and HIV, this information is not consistently applied to their sexual behaviour (Comer & Nemeroff, 2000; Milhausen et al., 2013; Reece et al., 2010). Much research has shown that possessing knowledge about the risks associated with unprotected sexual activity (e.g., STI and HIV transmission) is just one component in a complex system of sexual decision-making

(Fisher & Fisher, 1992, 1993; Fisher, Fisher, & Shuper, 2009). Thus, it is important to recognize that a number of factors may influence how men and women apply their knowledge about the risks associated with unprotected sex to their actual behaviour. Canin, Dolcini, and Adler (1999) point to the importance of addressing the influence of contextual and socio-cultural factors when attempting to understand and/or examine unsafe sexual practices. Examining the environmental (i.e., social, physiological, and cognitive) factors that lead people to engage in unprotected sexual encounters is very important for the prevention of new STI/HIV infections. A greater understanding of the factors that can affect condom use decisions during sexual encounters will be instrumental for informing programs to promote healthy sexual behaviour and reduce the number of new STI and HIV infections. Contextual or environmental motivational factors (i.e., factors that may be present and particularly influential in a given situation or context) such as sexual arousal, partner familiarity, relationship motivation, and motivational state are of particular interest, as these factors vary in their relevance or intensity from encounter to encounter, as well as between individuals. These contextual factors may significantly increase an individual's propensity towards sexual risk-taking behaviour (Norris, Masters, & Zawacki, 2004; Zawacki et al., 2009). The overarching aim of the current studies was to more closely examine these factors (sexual arousal, motivational state, partner familiarity, and relationship motivation), their interactions among each other, as well as their connections to men and women's sexual health decision making.

Sexual Arousal

Although there are a host of variables that lead to increased incidences of unprotected sexual activity (Norris et al., 2004), sexual arousal may be the most common and problematic, in part because it is a desired and sought-after component of consensual sexual encounters. Despite its desirable qualities, sexual arousal has been linked with increased risk taking and greater intentions to engage in risky sexual behaviour in men and women (e.g., Areily & Loewenstein, 2006; Baker & Maner, 2008; Shuper & Fisher, 2008; Skakoon-Sparling, Cramer, & Shuper, 2016).

Understanding more about why and how sexual arousal has this impact on cognition and subsequent sexual health decision-making and behaviour will be instrumental for the creation of effective interventions to encourage safer sexual practices. Because sexual arousal can impact both internal (physiological and cognitive) elements in individuals, as well as their interactions with potential sexual partners, sexual arousal's effects at both the dyadic and the individual levels must be considered when attempting to encourage and train sexual risk avoidance behaviour (Bancroft, 2000).

The effects of sexual arousal.

Sexual arousal is widely considered to be a multi-dimensional state that involves the experience and expression of emotion, physiological changes (such as an increase in respiration and heart rate, and changes in blood flow resulting in vasocongestion – i.e., turgidity in genital tissue), and motivated behaviour (e.g., Chivers, 2005; Frijda, 1986). It is this motivated sexual behaviour that is of particular interest for the current studies.

According to the *Incentive Motivational Model* (IMM) (Bindra, 1978; Singer & Toates, 1987), sexual motivation (i.e., the motivation to obtain sexual gratification) is

triggered by the nervous system's reaction to incentives and cues associated with sexual gratification: the stronger the cue or incentive for that individual, the stronger his/her motivation to obtain gratification (Toates, 2009). As similarly suggested by Norris et al. (2004), IMM presupposes that motivated behaviour is controlled by a combination of the stimuli present in the environment and internal cognitive processes (see also: Metcalfe & Mischel, 1999).

I submit that sexual arousal is part of this cognitive reaction to sexual incentives and cues. Sexual arousal may be a side effect or may co-occur with the nervous system's reaction to cues associated with sexual gratification, and thus drive the sense of sexual motivation described in the literature (Blanton & Gerrard, 1997; Ditto et al., 2006; Loewenstein, 1996; Toates, 2009).

There is evidence suggesting that sexual information is likely processed by two parallel systems: one conscious and one unconscious (Janssen, Everaerd, Spiering, & Janssen, 2000). This two-tiered system forms the basis of the IMM. The conscious processing system relies on the activation of long-term memory to assist with comprehending and judging contextual cues. This system processes information more slowly, likely because it must rely on an effortful procedure to determine the range of possible appropriate reactions. In contrast, the unconscious system proceeds rather quickly and processing of cues occurs automatically, though on a less sophisticated or refined level.

An individual's sexual health behaviour during a sexual encounter is dependent upon both the rapid automatic processing, as well as the slower controlled processing of the information gleaned from stimuli present (Both, Brauer, & Laan, 2011; Singer &

Toates, 1987; Toates, 2009). However, the speed of the automatic/unconscious processing system may give it an advantage over the slower conscious system. Although the conscious cognitive mind may have particular goals, motivations, or intentions regarding sexual risk taking behaviour, sexual arousal may affect and, in many cases, overwhelm the conscious level of processing, via the unconscious level, and interfere with protective health goals.

Such a conflict places the controlled processing system at a disadvantage. Because sexual arousal likely affects the automatic system first, this would increase the perceived incentive value of a contextual cue in advance of the conscious processing system's deliberations. This increase in the perceived incentive value of a cue would then bias the conscious processing system to give more weight to instigatory contextual cues. Thus, once stimuli associated with sexual gratification (such as an attractive and willing sex partner) are present and immediate, and pleasure seems to be available, it becomes difficult for an individual to resist immediate gratification in favour of a delayed reward (e.g., having protected sex at a later time) or perhaps even to delay receiving a reward (e.g., interrupting sexual play to engage in condom negotiation).

When the perceived incentive value of a cue is high for an individual (e.g., if the willing partner is particularly attractive and/or insistent/persuasive), this gives a large advantage to the automatic processing system (Janssen et al., 2000; Toates, 2009), creating what could be termed *sexual myopia*. Compounding this effect is the fact that the perceived incentive cue (the attractive and willing sexual partner) is likely to have a stronger impact because it is physically present. In contrast, inhibitive cues (e.g., the risk

of STI/HIV transmission or unwanted pregnancy) are often merely hypothetical, more distal, and easier to discount (Toates, 2009).

Additionally, strong sexual arousal (or sexual motivation) frequently produces stress in the form of sexual frustration, which further strengthens the rapid automatic processing and weakens the more contemplative cognitive processing of environmental cues (Toates, 2009). This corresponds with theories regarding *unrealistic optimism*, where individuals believe their chances of experiencing undesirable consequences (such as STI/HIV infection) are lower, while their chances of experiencing desirable events are higher than for the average person (Clarke, Lovegrove, Williams, & Macpherson, 2000; Gold, 2006; Klein & Weinstein, 1997; Weinstein, 1982; 1989). Sexual arousal may enhance this experience of unrealistic optimism in the context of sexual risk taking.

Canin and colleagues (1999) note that humans are motivated to seek pleasure and (sexual) gratification (see also Blanton & Gerrard, 1997; Ditto, Pizarro, Epstein, Jacobson, & Macdonald, 2006; and Loewenstein, 1996). As such, sexual arousal can create a sense of urgency and increases the likelihood of engaging in sexual risk-taking, especially during situations where intentions are ambiguous and/or there is a sense of spontaneity – as with a new or a casual sex partner. Freud (1905) also described the experience of tension associated with sexual arousal and the sense of urgency that is not always pleasurable itself, but that is pleasurable to relieve.

With these effects compounded, the result is that a strongly sexually arousing contextual cue will overwhelm the automatic/unconscious processing system. This creates frustration and a sense of urgency, which further contribute to usurping the slower conscious processing system. This effect, in turn, produces errors in judgement that

inflate the value of incentive cues and make it easier to discount any inhibitive cues present in the situation. This is what I hypothesize sexual myopia to be, sexual arousal's interference with the cognitive mechanisms essential for thoughtful judgement and decision-making.

Sexual myopia can be viewed as an environmental or contextual feature in sexual encounters, one that has been shown to affect decision-making and risk-taking. In retrospective analyses, women reported greater sexual arousal along with a perception of lower costs and greater benefits to sexual intercourse with a casual partner (Velez-Blasini, 2008). When asked about the reason for their failure to use condoms at past sexual encounters, inconsistent condom users commonly reference being overwhelmed by intense feelings of passion and desire – emotions strongly associated with sexual arousal (Downing-Matibag & Geisinger, 2009; Patel, Gutnik, Yoskowitz, O'Sullivan, & Kaufman, 2006; Strong et al., 2005; Teitelman, Tennille, Bohinski, Jemmott, & Jemmott, 2011). Additionally, men and women who report a strong experience of sexual arousal at a past sexual encounter are less likely to have used a condom during this encounter (Boldero, Moore, & Rosenthall, 1992; Suvivuo, Tossavainen, & Kontula, 2009). Sexual arousal has been found to inhibit condom insistence in women (Norris et al., 2009), is associated with incorrect condom use in men (Graham, Crosby, Milhausen, Sanders, & Yarber, 2011), and has been shown to produce greater intentions to have unprotected sex (Ariely & Loewenstein, 2006; Ditto et al., 2006; George et al., 2009; Shuper & Fisher, 2008; Skakoon-Sparling et al., 2016). Sexual arousal predicts men and women's intentions for risky sexual behaviour (over any effect of alcohol); in fact, the more

sexually aroused an individual is, the more willing he or she may be to have sex without a condom (Abbey, Saenz, & Buck, 2005; George et al., 2009).

My own work examining the effects of sexual arousal has generated findings in agreement with the above. My master's thesis work compared the responses of sexually aroused and control participants ($N = 144$) to scenarios describing hypothetical risky sexual encounters. My findings demonstrated that sexually aroused men and women showed greater intentions to engage in risky sexual behaviour. A parallel study also investigated the responses of sexually aroused and control participants in a game of blackjack ($N = 122$). Here, sexually aroused men and women showed increased impulsivity and risk-taking on this implicit measure of risk behaviour (Skakoon-Sparling, et al., 2016). These findings suggest that, when sexually aroused, men and women will both experience impaired decision-making. My most recent work has also investigated the associations among sexual arousal, self-control, and sexual self-restraint ($N = 75$). In this study, sexually aroused men and women showed lower scores on measures of self-control and of sexual self-restraint, compared to participants in the control condition (Skakoon-Sparling & Cramer, 2016). These results suggest that sexual arousal may deplete individuals' internal stores of self-control (or may make it difficult to access these) which, combined with the corresponding lowered sexual self-restraint, suggests that sexual arousal may negatively impact sexual health decision-making via impaired self-control.

Based on the findings presented above, it is clear that sexual arousal is a significant contextual feature in consensual sexual encounters, and that it has the potential to increase sexual risk-taking and negatively affect condom use. However,

condom use can generally be considered a dyadic behaviour, which makes it unlike any other health behaviour (e.g., smoking cessation, heart health, or weight control). Because condom use frequently involves the interaction of two (or more) individuals (Harvey et al., 2006), it is thus made more complex by the relationship factors that can influence decision-making and behaviour (e.g., Umphrey & Sherblom, 2007). Certainly, sexual arousal is not the only critical contextual feature in such encounters; factors such as individuals' level of relationship motivation, their current meta-motivational state, well as their familiarity with a partner may each play an important role on their own, and may also interact with sexual arousal to impact sexual decision making and the condom negotiation process.

The Relation between Meta-motivational States and Sexual Risk Taking

According to Reversal Theory, personality and motivation are not static concepts; they are fluid and subject to change from moment to moment (Apter, 2001). In this view, humans may be seen as being predictably unpredictable, and Reversal Theory offers an explanation as to why individuals may behave so inconsistently and even contradictorily at times (Apter, 2007). Reversal Theory is chiefly an examination of the dynamic shifts (or reversals) between meta-motivational states that may impact the expression of personality. This view is in stark contrast to a traits perspective, that sees personality as largely fixed (due chiefly to genetics; e.g. Evans & Rothbart, 2007; Gray, 1987). Instead, reversals between states can change the meaning attributed to a situation: an event that seemed dull or serious at one time might seem exciting with a change of context or mindset.

The meta-motivational states described by Reversal theory are organized into four pairs, or domains of experience. An individual will always be in a state of flux between the two opposing states that characterize each of these four domains (Apter, 2007; 2014). The first domain of experience is the *Means-end* domain, made up by the opposing telic and paratelic states. An individual experiencing the telic state will be in a more serious and goal-oriented mindset, where they may be more concerned about accomplishing goals and the future consequences of their current behaviour. In contrast, when experiencing the paratelic state, this same individual's mindset will be more playful and enjoyment oriented, this person may engage in more risk-taking behaviour in this state because she is less concerned about the future consequences of her current behaviour. The second domain of experience is the *Rules* domain, which consists of the conforming state and the rebellious or negativistic state. An individual experiencing the conformist state will be more agreeable, cooperative, and will feel a stronger desire to follow rules or to conform to social norms. In contrast, while experiencing the negativistic state, this individual will be less inclined to follow established rules or conform to social norms; she may be more stubborn and show more rebellious attitudes. The third domain of experience is the *Transactions* domain, characterized by the mastery state and the sympathy state. An individual experiencing the mastery state will feel a strong desire for control and may show more competitiveness with others or with herself to achieve or not to yield. Yet, while experiencing the sympathy state, this individual would experience a sense of affection for those around her, particularly those with whom she has personal relationships; while in this state she would show more care and sympathy for the needs of these others. Finally, the fourth domain of experience is the *Relationships* domain,

composed of the autic and alloic states. While experiencing the autic state, an individual would behave in a more individualistic or self-oriented fashion, considering the outcomes of her current situation in terms of how it might aid her in achieving her own goals or desires. In contrast, while experiencing the alloic state, an individual would be more other-oriented and would consider the outcomes of her current situation in terms of how it might benefit others that she cares for.

In general, every individual has the capacity to experience each of the meta-motivational states described by Reversal Theory and will experience shifts, or reversals, within each domain any number of times throughout each day. For instance, one moment an individual may be in a conforming (cooperative and rule-following) meta-motivational state, riding public transit in a courteous manner; the next moment he may shift to a negativistic (rebellious or stubborn) state and choose to graffiti a bench. Such shifts can occur for a number of reasons. For instance, a contingency reversal tends to occur based on the presence of particular environmental cues (such as ambient music or a topic of conversation). A frustration reversal tends to occur because the individual is not having her needs met by her current meta-motivational state (e.g., when trying everything to meet a goal is not working, an individual may defensively shift to a playful state, where she can allow herself to not care as deeply about meeting that goal). Finally, a satiation reversal tends to occur based on the passing of time or the satisfaction of a state (Apter 1984; 2001).

Of particular interest for the current context is the contingency reversal, a shift between meta-motivational states that is associated with a change in the individual's circumstances; this could be due to a change in the physical location, a change in the

setting, the start or finish of a particular event, a change in the context, or simply a shift in how a situation is experienced (Desselles & Apter, 2013). For instance, moving from a public location (e.g., a restaurant) to a private location (e.g., an apartment) could elicit a contingency reversal, which would encourage a couple to switch to a more playful (paratelic) and other-focused (alloic) motivational state. Similarly, an amicable outing with a friend that gradually becomes a romantic encounter could also elicit a contingency reversal, where each person would become more cooperative and agreeable (conformist).

Meta-motivational reversals may interact with not only how an individual experiences a situation and interprets stimuli present, but also how she reacts to particular situations, which could impact her decision making process. Because the reversal between states is largely thought to be involuntary, an individual is not usually able to cognitively choose to switch from one state to another (Apter, 2001). Additionally, individuals may experience the dominance of particular states. This does not mean that they do not experience an opposing state, simply that they experience it less frequently and/or that they more easily reverse into their dominant state (Apter, 2001). For instance, an individual who is dominantly in the conformist state will typically seem obedient in nature, but may still occasionally (albeit rarely) shift into a more rebellious state from time to time.

Two meta-motivational domains are thought to be associated with risk-taking and are relevant to sexual risk taking in particular. The first of these is the *Means-End* domain, characterized by the paratelic and telic meta-motivational states. Although the telic state is not particularly associated with sexual risk-taking (as this state is characterized by goal-oriented behaviour and the avoidance of arousal), the paratelic state

(playful, enjoyment oriented, and arousal seeking) is thought to contribute to risky sexual behaviour. Indeed, Lafreniere, Cramer, and Out (as cited in Lafreniere, Menna, & Cramer, 2013) evaluated the association between the telic state and perceptions of health risk, they determined that individuals who were telic dominant demonstrated a greater concern for the health risks associated with risky behaviours (e.g., unprotected sexual activity). In contrast, when experiencing the paratelic meta-motivational state (or when this state is dominant), an individual would likely be less concerned with the outcome or long-term consequences of his behaviour (e.g., an unwanted pregnancy or an STI/HIV infection), instead his attention would be focused on the in-the-moment experience of pleasure and/or intimacy (Gerkovich, 2001). In fact, a study by Skakoon-Sparling and Cramer (2014) determined a link between increased subjective sexual arousal and the paratelic state in an undergraduate student sample ($N = 152$), such that increased sexual arousal was associated with a stronger shift toward the paratelic state. These findings suggest that sexual arousal and meta-motivational states may indeed be linked with sexual decision making and risk taking.

The second domain associated with sexual risk taking is the *Rules* domain, characterized by the negativistic and the conformist states (Gerkovich, 2001). Recall that individuals who are experiencing a shift to the negativistic state (or within whom this state is more dominant) may be motivated to break rules, defy what is expected of them, or may simply stubbornly maintain a particular standpoint (Apter, 2007; Gerkovich, 2001). In a sexual encounter, the dominance of the negativistic state could influence an individual to choose to have unprotected sex simply because it is exciting to knowingly engage in this more risky behaviour. Very little work has examined the link between

negativism and sexual risk taking. However, Lafreniere and colleagues (2013) found that adolescents who were dominant in negativism were more likely to report engaging in risky sexual behaviour. In addition, research exploring the association between this meta-motivational state and other risky health related behaviour (e.g., smoking cessation), suggests that engaging in a risky health behaviour is linked with negativism. Every individual has a sense that there are particular rules associated with health behaviours (e.g., one ought to engage in protected sex). These rules can come from a variety of sources: they may be imposed by parents, other authority figures, society in general, or they may even be self imposed. Individuals may feel that disobeying rules about health behaviour satisfies their rebellious urges (O'Connell, Schwartz, Gerkovich, Bott, & Shiffman, 2004). More work is needed to better understand how the negativistic state may relate to sexual risk-taking, and how it may interact with other personality and contextual features, like relationship motivation or partner familiarity.

Relationship Motivation

Much of human behaviour is motivated by a need to belong (see Baumeister & Leary, 1995). We seek to form strong social bonds with others around us to such an extent that it can be considered an innate need (see Buss, 1990). This is no surprise, since forming strong relationships with other humans has offered many survival and reproductive benefits throughout our history as a species.

Indeed, men and women enter a sexual encounter with a variety of short and long-term goals in mind. These goals may include sexual satiation, pleasure, safety, and, of course, relationship goals (Zawacki et al., 2009). Through continuous monitoring of a situation, individuals will evaluate whether or not they will be able to attain their personal

mix of goals, as well as which goals are most or least likely to be met. For instance, a man who has the goal to develop a romantic relationship with his date will constantly appraise his situation during their encounter to determine whether he will be able to realize this goal. He will need to decide, for example, whether agreeing to have unprotected sex will facilitate his goal to begin a long-term romantic relationship with this partner. His desire for a long-term relationship, however, may compete with his desire to avoid the risks associated with unprotected sexual activity with a first-time partner (as demonstrated by Umphrey & Sherblom, 2007).

In fact, there is much support for the notion that sexual activity and emotional bonding are deeply linked. For instance, unlike many other mammals, humans prefer to have sex in private and to sleep together with their partner afterward (Ford & Beach, 1951). Areas of the brain that are active during the experience of romantic love are also active during the experience of sexual arousal and desire (Diamond & Dickenson, 2012) and hormones like oxytocin and vasopressin (which facilitate bonding behaviours in many mammals, including humans) are secreted during sexual activity (e.g., Carter, 1992; Filippi et al., 2003). The support in the literature for the association between sexual activity and the promotion of bonding between partners (Birnbaum, 2003; Birnbaum & Gillath, 2006) suggests that it would be reasonable for an individual to view engaging in sexual activity as a viable way to achieve the goal of developing a romantic relationship with another individual.

Gillath, Mikulincer, Birnbaum, and Shaver (2008) primed male and female participants with subliminal and supraliminal sexual stimuli in a series of experiments designed to explore the effects of sexual priming on behaviours associated with

relationship initiation and maintenance (e.g., self-disclosing, making sacrifices for a partner, choosing positive conflict-resolution styles, etc.). The authors found that sexual priming (primarily subliminal rather than supraliminal priming) resulted in both male and female participants demonstrating increased motivation to initiate and maintain close behaviour. The authors explain that this subliminal activation of the sexual system, which is involved in pair-bonding, motivated participants to generate the optimal conditions for reproduction and survival (i.e., a strong attachment and relationship). Thus there seems to be a close link between sexual activity (including risky sexual behaviours, like unprotected sex) and the motivation to develop romantic relationships.

For the purposes of the current studies, *Relationship Motivation* refers to the degree to which an individual is motivated to pursue, establish, and/or maintain a long-term romantic relationship with another individual. Zawacki et al. (2009, p. 724) similarly explored the importance of considering the strength of a woman's relationship goals, "that is, how motivated she is to pursue a relationship." Strong relationship motivation can be a powerful influence on an individual's behaviour, because concerns about relationship maintenance or establishment can significantly increase the importance an individual places on managing a potential partner's perceptions of oneself and the bourgeoning relationship (Zawacki et al., 2009). This concern for impression management would, in turn, influence how or whether individuals choose to communicate their concerns about sexual health practices. Engaging in condom negotiation or STI/HIV inquiry and disclosure is associated with some degree of social discomfort (Afifi, 1999; Hammer, Fisher, Fitzgerald, & Fisher, 1996; Umphrey & Sherblom, 2007). Individuals are reluctant to engage in condom negotiation because they

view such topics of conversation as posing a risk to the establishment or maintenance of a desired romantic (or sexual) relationship (Afifi, 1999; Choi, Rickman, & Catania, 1994; Edwards & Barber, 2010; Harper, Dickson, & Welsh, 2006; Umphrey & Sherblom, 2007; Widman, Welsh, McNulty, & Little, 2006). Thus, it is clear that the level of relationship motivation individuals experience at the time an encounter occurs could influence their sexual decision making and risk-taking – particularly their willingness to discuss sexual safety information.

It seems that discussing sexual history with a new partner is a topic that people would rather avoid. Anderson, Kunkel, and Dennis (2011) interviewed 102 individuals about why they would want to avoid discussing their sexual past with a new partner; commonly cited reasons included concern about emotional upset and perceived threats to the new relationship. Lo, Sea, and Poppen (2009) have discussed the undesirable potential for emotional vulnerability as well as personal and sexual rejection that sexual partners may wish to avoid by skirting discussions of sexual health information. Dillow and Labelle (2014) also point out that some individuals who wish to ask a sexual partner about their sexual health may fail to do so because they are reluctant to disclose their own sexual health history (particularly if their own STI testing record is not up-to-date).

A desire to seek emotional closeness tends to be a barrier to protected sex (Bell, Atkinson, Mosier, Riley, & Brown, 2007). A qualitative study examining adolescent women's experiences with unwanted unprotected sex (Teitelman et al., 2011) found that feelings of attraction to a partner made respondents more vulnerable to pressure to have unprotected sex. Further, the young women in this study reported less willingness to begin condom negotiation if they thought their partner might not want them as a romantic

or sexual partner after they had broached the subject. Similarly, in a study examining the content and outcomes of young adults' conversations about sex, Faulkner and Lannutti (2010) found that participants reported feeling awkward when asking questions about a partner's sexual history. Respondents claimed they felt uncomfortable discussing this topic in the early phases of a relationship.

Clearly, individuals find discussing sexual health information to be a daunting task. Merely having an interest in taking safer sex precautions is associated with a personality that values caution, effort, maturity, and planning (rather than spontaneity and pleasure – characteristics associated with unprotected sex). It seems that these are considered to be unappealing traits among many young adults (Adelman, 1991; Metts & Fitzpatrick, 1992), and thus discussions about sexual health precautions may also be evaded, so as to avoid the risk of seeming unappealing to a new sexual partner (Afifi, 1999; Umphrey & Sherblom, 2007).

Interestingly, the literature suggests that it is even more challenging to appropriately address the issue of sexual history later, once a relationship is more established, because of the expectation of trust and commitment (as described in Buysse, 1998), and so is it unclear when such a conversation is expected to naturally take place. In fact, Buysse (1998) suggests the answer may be *never*, because individuals seeking a longer-term, stable relationship frequently attempt to select partners who *seem* safe (a notion also supported by Afifi, 1999), though these evaluations tend to be based on personality characteristics rather than objective risk assessment. Because trust can be seen as a prototypical element in longer-term, stable relationships, an individual who is strongly motivated to quickly establish a strong relationship would be eager to experience

and demonstrate this sense of trust in a new partner. Such a desire, and the accompanying behaviour, would interfere with the initiation of discussions about past risk exposure, as well as condom negotiation, at any stage of relationship establishment or maintenance.

Zawacki et al. (2009) discuss that a strong desire to establish and maintain a romantic relationship has been shown to negatively impact heterosexual women's motivations to engage in condom negotiation or to avoid risky sex. They further point out that strong relationship motivation increases individuals' concerns about broaching topics related to safer sexual practices; insisting on condom use could be seen to imply that either they have engaged in risky behaviour in the past, or that they believe their partners have done so (Afifi, 1999). Such a situation could threaten the establishment or maintenance of a new relationship by damaging a potential partner's opinion or impression of the individual (Hammer et al., 1996). In fact, an individual with high relationship motivation will likely be reluctant to engage in any discussion of past sexual behaviour (limiting his/her ability to correctly estimate risk) because of concerns that such a conversation would damage the sense of trust and respect s/he values (Hammer et al., 1996). Zawacki et al. (2009) also suggest that because condoms can be perceived to interfere with intimacy and warmth, as they are a physical barrier, an individual with high relationship motivation may view condom negotiation and insistence as an obstacle to establishing intimacy in a new relationship.

Zawacki et al. (2009) compared condom negotiation strategies with familiar and unfamiliar hypothetical partners in high and low relationship motivated heterosexual women. Participants received either a high dose, a low dose, or zero dose of alcohol, and

were then instructed to read and project themselves into a story depicting a sexual encounter with a male partner. The familiarity of the hypothetical partner was experimentally manipulated by changing the background details provided about the partner in the story (the high familiarity partner was described as being a long-time acquaintance with ties to the individual's hypothetical social network; the low familiarity partner was described as being the new roommate of a friend's boyfriend). The beginning of a sexual encounter was described in the story, culminating in a scenario where the hypothetical partner requests unprotected sex. Condom negotiation strategies and intention to use condoms were assessed periodically, in between three sections of the story. Following the presentation of the story, participants completed a measure assessing relationship motivation. The authors found that women who scored high on this measure of relationship motivation were less likely to initiate condom negotiation; and, when they did engage in condom negotiation, they selected strategies that would support, rather than undermine, relationship goals (e.g., suggesting to a partner that using condoms would show how much he cares for her). This study demonstrates how relationship goals can influence the way an individual behaves in a romantic/sexual situation: it may impact their cognition and interactions in a way that leads to increased sexual risk taking. This study also suggests that partner familiarity may play an important role in the context of sexual decision-making and risk-taking during an ongoing sexual/romantic encounter since the female participants with higher relationship motivation tended to view more familiar partners as having greater relationship potential.

Canin et al. (1999) suggest that once familiarity and trust have been established with a partner, engaging in condom negotiation may be seen as a threat to each partners'

perceptions of the relationship, and raise issues about trust, which can be uncomfortable. As mentioned above, having unprotected sex can be used as a sign or signal of trust in a sexual partner (Corbett, Dickson-Gomez, Hilario, & Weeks, 2009; Hock-Long et al., 2012) and as such, individuals who are strongly motivated to form a strong new romantic relationship may also be motivated to demonstrate their trust in a new partner, particularly if this partner is familiar, from other social contexts.

Partner Familiarity

Sexually active individuals use a variety of strategies in order to manage their risk of exposure to STIs or HIV (Norris et al., 2004). One such strategy involves choosing to have unprotected sex with regular or long-time partners only and choosing to have only protected sex with casual or new partners (Fishbein & Jarvis, 2000). In a study by Crawford, Turtle, and Kippax (1990), students rated the relative safety of different sexual practices with both casual and regular partners, using a dichotomous scale (safe versus unsafe). The purpose of this study was to investigate the strategies students employ to avoid AIDS transmission. Predictably, students believed that unprotected sex with a regular partner was safer than with a casual partner. The authors also found that participants strongly endorsed a risk avoidance strategy that involved attempting to abstain from sex with partners who seem high-risk. This is similar to the findings of Crosby and colleagues (2014a), who found a strong association between increased perceived risk of STI transmission (based on their judgements of their partners) and increased condom use. However, one of the flaws of relying on such a strategy lies in the fact that individuals are relatively poor at recognising subtle differences between safe and unsafe partners; instead, they frequently rely upon irrelevant factors (such as appearance

or personality factors) to judge a potential partner's relative safety (e.g., Agocha & Cooper, 1999; Gold et al., 1991; Keller, 1993; Maticka-Tyndale, 1991; Williams et al., 1992). In line with these findings, Kelly and Kalichman (1995) have discussed that feelings of affection toward a partner (new or regular) can reduce the likelihood that an individual will perceive this person as a health threat; thus reducing the salience of engaging in health related actions, like condom negotiation and use. This sense of affection and perception of trust, or familiarity, may account for the findings of Sanders and colleagues (2010): they found that 40.7% of the women in their nationally representative U.S. sample reported not having used a condom during their last sexual encounter with a first-time, new partner.

In their paper, Comer and Nemeroff (2000) discuss a series of studies exploring how participants use the principle of *magical contagion* when judging the riskiness of potential sexual partners. They describe the concept of magical contagion as "an intuitive principle of thinking that describes the transfer of properties from a source to a recipient through contact" (p. 2470). Thus, it may be thought of as an heuristic, where the properties of an object (or source of contagion) are transferred to a recipient through contact or interaction with this object/source. For example, if a piece of food were to come into contact with a dirty surface, it would take on the property of *dirty* and thenceforth also be considered dirty. This concept of contagion does not only apply to physical properties (like moisture or grease), but to moral or abstract properties as well (e.g., goodness or intelligence). For example, a kind individual who spends time with an unkind individual may be seen by peers to take on the property of unkindness as well, despite no actual change in their disposition or behaviour. Additionally, the level of harm

conferred by a contagion is determined by the nature of the relationship between the source and the recipient – thus, contact with a potential source of contagion could be viewed by an individual as being beneficial or harmful (positive or negative) based on her social and emotional relationship with the source. For example, sitting next to an unattractive stranger on a bus who smells of body odour might make individuals feel that they have become soiled by association, whereas sitting next to a cherished spouse who smells of body odour would likely not evoke similar feelings. In this vein, an individual would be less likely to perceive a potential sexual partner as a source of STI or HIV transmission if he feels positively about this person. Comer and Nemeroff (2000) assert that the safer an individual feels emotionally with a partner, the less she will perceive this partner as a threat for STIs/HIV, independent of any real-world, objective risk this partner might pose.

In Comer and Nemeroff's (2000) study, male and female participants were asked to envision themselves as the main actor in one of three first-person narrative scenarios: the scenarios either described a casual partner, a known/regular and emotionally safe partner (where there are intimate feelings shared, but no discussion of STI/HIV safety risks), and a known/regular and more objectively safe partner (where favourable sexual history details have been disclosed). After reading their assigned scenario, participants completed a questionnaire containing items concerning their reactions to the scenario (e.g., "*If you and Jessica were to sleep together again, how likely is it that you will use a condom (assuming you do not need it for birth control)*?"). Interestingly, although the casual partner was generally perceived as being a greater risk for STI/HIV transmission, participants failed to adequately distinguish between the emotionally safe and the more

objectively safe partners. This finding suggests that men and women have difficulty recognising the objective riskiness of unprotected sex if it is with a partner with whom they feel emotionally close.

Comer and Nemeroff's (2000) paper also highlights an important distinction that must be drawn within the category of casual or new partners. The authors point out that, in much of the research investigating sexual behaviours with casual versus regular partners, it is frequently unclear how young adults make such a distinction. It is problematic that, in a large proportion of the research examining differences in condom practices, there is no distinction made between familiar and unfamiliar new partners. Rather, regular partners are assumed to be familiar and casual or new partners are assumed to be unfamiliar. For example, in a study examining women's risky sexual behaviour with new and regular partners, Parks, Hsieh, Collins, Levonyan-Radloff, and King (2009) operationalized a *new partner* as someone the female respondents may not know well. The problem with only differentiating between long-time partners and partners an individual does not know well is that this methodology may overlook encounters with new sexual partners if these partners are well known to the individual (e.g., a co-worker, classmate, or friend). Whereas such a partner is likely, statistically, to pose a similar risk of STI/HIV transmission as a completely unknown partner (Prestage et al., 2012), and the individual may know just as little about this person's sexual history as she might know about a stranger's (Anderson et al., 2011; Buysse, 1998), the previously established trust of prior acquaintance (Hammer et al., 1996) could interfere with appropriate safer sex decision making. Such a distinction (between familiar and unfamiliar new partners) is essential to consider in sexual risk taking research.

Familiarity, and the accompanying emotional response an individual feels toward a new, but known, potential partner, may influence how he perceives the risks associated with unprotected sex. In fact, a recent study by Sparling and Cramer (2015) supports this assertion. In this study, men and women were presented with a series of vignettes describing an encounter that could lead to sexual intercourse with either hypothetically familiar or unfamiliar partners. Hypothetical new sex partners who were judged to be more familiar were also seen as more appealing sexual and romantic partners, more trustworthy, and were seen as a lower risk for STI transmission.

The findings of Comer and Nemeroff (2000), regarding participants' failure to distinguish between emotionally safe and objectively safe partners, are also similar to those of Kelly and Kalichman (1995). The latter found that, although individuals may be able to recognise that unprotected sex with unfamiliar casual partners is highly risky, they do not tend to recognise a partner with whom they have had a previously established loving relationship as a health threat, independent of STI/HIV relevant factors.

Remarkably, Comer and Nemeroff (2000) found that participants frequently reported beliefs that they and their potential partner could simply intuit their STI/HIV status, without actually having been tested, based on their feelings. This is consistent with the findings of Downing-Matibag and Geisinger (2009), who conducted interviews with college students about casual sexual behaviour. The latter paper investigated how the Health Belief Model (Rosenstock, 1974; Rosenstock, Strecher, & Becker, 1994) applies to college students' understanding of their own sexual risk taking behaviours. The Health Belief Model describes how an individual's beliefs about their health issues, the perceived benefits of potential action to improve their health, the perceived barriers to

engaging in such action, and his/her self-efficacy explain engagement (or lack of engagement) in health-promoting behavior (Rosenstock, 1974). Downing-Matibag and Geisinger (2009) found that one of the most common reasons for an underestimation of STI risk was because individuals placed more trust than was warranted in their partners, with respect to STIs. A common theme in these findings was that participants felt safe having unprotected sex during a casual sexual encounter because they had some level of prior acquaintance with this person (74% of participants reported some degree of acquaintance prior to a casual encounter). Participants frequently reported feelings of trust that a partner was not infected with any STIs due to simple (though irrelevant) personal connections via mutual friends or having attended the same high school, or due to other personal characteristics, similarly irrelevant to objective STI/HIV risk.

Participants in this study also tended to assume their partners were STI-free if they did not disclose that they were not such (Downing-Matibag & Geisinger, 2009). This is consistent with Buysse (1998), who found participants were apt to rely on selecting a suitable partner based on intuition and shared social networks, rather than basing their decisions on actual conversations about sexual history and safety. Such findings demonstrate a troubling trend where, rather than engaging in proactive condom use and discussion, young adults instead rely on voluntary disclosure from a partner. This implies an expectation of not only truthfulness, but also of awareness and regular testing, since many STIs can be symptom-less. Interestingly, since individuals are primarily motivated to only disclose sexual safety information when they perceive themselves to be at risk (Ellen, Vittinghoff, Bolan, Boyer, & Padian, 1998), not only are individuals relying on a partner to disclose important sexual history information, but they

are also unlikely to invite or engage in such disclosure themselves if they feel that the partner appears safe (using whatever criteria they choose).

Suvivuo et al. (2009) conducted a qualitative examination of narratives, written by teenage girls, about a notable sexual encounter where each of the young women reported experiencing strong sexual motivation. The narratives were examined in an attempt to understand how factors such as behavioural intentions, attitudes, perceived social norms, and self-efficacy impact protective sexual behaviour. Of note, the authors found a number of trends in the narratives that involved a failure to use condoms. It was observed that the decision-making processes in these narratives relied on intuition, rather than actual facts. Additionally, in the condom non-use narratives, once a participant felt positive emotions (trust, like, love, etc.) toward her partner, she no longer effectively perceived the risks of unprotected sex.

Swann, Silvera, and Proske (1995) further investigated the concept that increased familiarity with a person encourages a judgment of him/her being inherently lower risk for HIV or STI transmission. The authors invited participants to view short videos presenting an HIV positive woman. The authors experimentally manipulated the content of the videos to make the woman appear to the participants as more or less familiar. Participants viewed either: (a) a still image of the woman, (b) a video where she talked about her background and interests, (c) a video where she talked about contracting HIV, or (d) a presentation combining the two videos types (background and HIV diagnosis). After viewing one of these video clips (a, b, c, or d), participants rated how likely it was that this woman was HIV positive, as well as how much they liked her, how well they felt they had gotten to know her, and how similar she was to themselves. The authors found

that, despite the fact that the background and personal information provided in video b was completely irrelevant to HIV status (this was determined through an independent analysis), participants presented with this video judged the target woman as being more likeable, more familiar, and less likely to be HIV positive. This study highlights the increased risk individuals may expose themselves to, based simply on a feeling of familiarity with a potential partner. Importantly, the findings of Swann et al. (1995) also demonstrate that perceived familiarity can be built quite quickly, through the disclosure of personal (though not necessarily sexual safety relevant) information. Familiarity seems to lead to a false sense of security, which makes it easier for individuals to discount objective signals of risk. Swann et al. (1995) also point out that the influence of familiarity is difficult to counteract, as its effects occur outside of our conscious awareness.

Antecedent to these findings, Williams et al. (1992) conducted focus groups with undergraduate students to better understand the dynamics of risky sexual behaviour among this group. The authors found that students were using implicit judgments – unrelated to actual HIV/STI information – to judge whether a partner seemed risky or not, and based their condom use decisions on these judgments. In particular, it was found that participants judged individuals known from other contexts (and whom they liked) as being less risky (despite having no information about HIV or STI status). These results clearly illustrate the important role familiarity plays when individuals attempt to judge the riskiness of having unprotected sex with a partner. Similarly, Zawacki et al. (2009) highlight the fact that individuals frequently judge potential partners as low HIV/STI risk, based on perception biases and on the incorrect use of heuristics (cf. Williams et al.,

1992). A sense of familiarity with a potential sex partner can act as a situational cue that can be perceived as being an indicator of low risk and, thus, a justification for unprotected sex (Zawacki et al., 2009).

In a similar vein as familiarity, the attractiveness of the information known about a potential partner also influences an individual to view this partner favourably, even if risky information accompanies this positive information. Hennessy, Fishbein, Curtis, and Barrett (2007) presented participants with brief vignettes about men and women. Each vignette was made up of sets of either positive facts about the target (e.g., "Paul is faithful to his friends), risky facts (e.g., "Bryan could be described as 'living in the moment'"), or a combination of these two types of facts, with the risky facts presented either first or second. The authors found that when the attractive, positive facts were presented first in the vignettes, participants tended to discount the risky facts and viewed these targets as more attractive partners and as less risky than targets where only risky facts were presented, or when the risky facts were presented first. This is an example of *attribute framing,* where the evaluation of an object, event, or person is affected by the attributes or characteristics associated with it (Levin, Schneider, & Gaeth, 1998). The valence of the frame (positive or negative) will impact the favourability of an evaluation. In the above example, presenting the attractive facts first cast a positive frame over participants' overall evaluation of the character in the vignette; conversely, presenting the risky facts first cast a negative frame. These findings mirror those of Comer and Nemeroff (2000), whose work on magical contagion (discussed earlier) suggested the positive and attractive information gleaned when one is getting to know an appealing

partner may bias us against attending to risky information presented at a later time and thus further detrimentally impact sexual decision making.

Syndemic Risk Factors That Impact Sexual Decision-Making

A syndemic is "a set of intertwined and mutually enhancing epidemics involving disease interactions at the biological level that develop and are sustained in a community/population because of harmful social conditions and injurious social connections" (Singer & Clair, 2003, p. 429). The syndemics approach recognises the fact that the people most at risk for HIV transmission tend to experience a complex array of co-occurring problems related to both health and social factors, which increases their risk of negative health outcomes (e.g., Stall et al., 2003). A number of syndemic factors have been associated with sexual risk-taking behaviours like inconsistent condom use and condom non-use (e.g., Stall et al., 2003). This is likely because these factors are also related to impaired sexual health decision-making. These factors include: a history of sexual abuse, depression, intimate partner violence, and recreational drug use.

Youths who have experienced sexual abuse tend to have a greater number of sex partners, are poor at setting boundaries, and show lower use of prophylactics (Hughes, Bean, & Harper, 2015). Childhood sexual abuse survivors are also more likely to contract an STI in adulthood, particularly since 40% report never using condoms (Saewyc, Magee, & Pettingell, 2004). However, Stall et al. (2003) emphasize that the associations between risk factors like childhood sexual abuse and other risk factors, like depression, are complex: there is an "additive interplay" (Stall et al., 2003, p. 941) among these factors, which increases the vulnerability of such high-risk populations. For instance, experiencing sexual abuse (during childhood or adulthood) is also correlated

with depressive symptoms and has been linked with increased sexual risk-taking behaviour in adulthood among women (e.g., Littleton, Grills, & Drum, 2014; Schloredt & Heiman, 2003; Zwickl & Merriman, 2011). Littleton et al. (2014) conducted a large study on women with histories of sexual victimization in order to determine the factors that lead to the use of sexual risk taking as a strategy to regulate one's affect. They also aimed to determine whether such a strategy (engaging in sex to regulate negative affect) would be predictive of sexual risk-taking behaviours. The authors found that survivors of sexual victimization who experience symptoms of depression are more likely to engage in risky sexual behaviour in an attempt to regulate their negative affect (particularly women who were victims of sexual abuse both in childhood and as adults).

Previously sexually abused youth are also more likely to report the use of substances including alcohol, marijuana, and hard drugs (Kilpatrick et al., 2000; Watts & Ellis, 1993). Substance use has been associated with a greater number of sexual partners and with less frequent condom use (Patrick, O'Malley, Johnston, Terry-McElrath, & Schulenberg, 2012). Additionally, recreational drug use has been correlated with an HIV positive serostatus in MSM clinic patients (Li, Baker, Korostyshevskiy, Slack, &Plankey, 2012) and drug use before or during sex is predictive of unprotected receptive anal sex among MSM (Hutton et al., 2013). In a sample of African American MSM, Tobin, Yang, King, Latkin, and Curriero (2016) found that poly drug users (individuals who regularly use more than one type of drug) were significantly more likely to have incurred a recent STI and were more likely to report engaging in sexual exchange (exchanging sex for money or drugs). Substance abuse has also been seen to co-occur with another syndemic risk factor: intimate partner violence (e.g., Bennet & Bland, 2008).

Past research has consistently shown that although women and men are equally likely to commit single acts of violence against a partner, women are still at increased risk to experience more frequent, more severe, and longer lasting acts of violence, they are also more likely to be physically injured by this violence (Archer, 2000; Malik et al., 1997; Tjaden & Thoennes, 2000). Additionally, intimate partner violence is a strong predictor of substance use and abuse and it has been linked with risky sexual behaviour (Callahan, Tolman, & Saunders, 2003; Rothman et al., 2012; Temple & Freeman, 2011). Reuter, Newcomb, Whitton and Mustanski (2016) investigated the outcomes for LGBT young adults who experience intimate partner violence using an ethnically diverse sample of young adults, who were part of a larger longitudinal study. They found a positive association between the experience of intimate partner violence and increased sexual risk-taking. Finneran and Stephenson (2014) conducted an online survey of men who have sex with men (MSM) who had either experienced or perpetrated intimate partner violence within the previous year. These authors also found a strong association between intimate partner violence and sexual risk taking (in this case, engaging in unprotected anal intercourse). Interestingly, the authors found that men who reported having engaged in unprotected anal intercourse were around 2 times more likely to report perpetrating violence against a partner. This suggests that both experiencing and perpetrating intimate partner violence is associated with increased sexual risk-taking and risk of STI/HIV transmission among MSM.

Sexual Decision Making and Heuristics

As Canin and colleagues (1999) discuss, decisions are optimally made based on adequate and accurate information, and in the context of minimal uncertainty. Decision-

making in a large proportion of sexual situations can easily be described as sub-optimal: more essential information is required than could be reasonably expected for an individual to possess (e.g., information about the average level of STI/HIV infection in their population, the transmissibility associated with different types of infections and acts, as well as the detailed sexual history of every potential sexual partner). It is unsurprising that such uncertainty leads to difficulty in making good judgments and an overreliance on mental heuristics. Rather than relying on logical thinking about a potential sexual partner's risk level, individuals instead rely on their intuitive judgments about how an average HIV or STI infected person would look or act (Canin et al., 1999). As the authors point out, young adults trying to maintain their sexual safety are faced with a difficult task: they must set and maintain a long-term goal (i.e., preserving their health), they must be prepared to capably manage the tools necessary for safer sex (e.g., condoms, condom negotiation, etc.), they must manage their own sexual arousal (in addition to the effects of any other substance they may have consumed that increase impulsive behaviours, like alcohol), and they must effectively manage any pressure (real and/or perceived) from their partner or perceived relationship pressure to have unprotected sex.

Indeed, sexual arousal alone strongly encourages a reliance on decision-making shortcuts. Normandin's (2010) work on sexual arousal and erotica found that sexual arousal produces errors in temporal and probability discounting. These results also suggest that individuals who are sexually aroused may be more likely to engage in risky unprotected sex rather than risk not having any sex (protected or not) later. Shuper and Fisher (2008) also found evidence of the effects of sexual arousal in HIV-positive MSM, suggesting that sexual arousal encourages a reliance on heuristics and promotes

motivated reasoning to justify engaging in unprotected sexual intercourse. Similarly, heterosexual men also perceived reduced STI risk when more sexually motivated (after exposure to photographs of sexually attractive women) (Blanton & Gerrard, 1997). Sexual arousal has been linked with the depletion of self-control (Skakoon-Sparling & Cramer, 2016), and individuals with low self-control (or who are experiencing depleted self-control) tend to engage in less analytical information processing. Instead, they tend to rely on habitual responses and heuristics (e.g., Fennis, Janssen, & Vohs, 2009). It is no wonder that, particularly in the context of navigating a sexual and/or romantic encounter, individuals will rely heavily on heuristics to reduce their cognitive workload.

Sexual decision making heuristics can be thought of as relatively automatic decision-making rules that individuals use when determining what steps they will take to protect their sexual health during a sexual encounter. Misovich, Fisher, and Fisher (1997, pp. 84-85) describe AIDS prevention heuristics as "simple decision rules that permit relatively automatic and cognitively effortless decisions about whether or not a partner is at risk for HIV, and thus whether or not to practice safer sex with the partner." For instance, if your potential sexual partner is someone you love and/or someone you feel that you know quite well, you may forgo using condoms with him/her. This practice is commonly seen in the literature (see above); individuals tend to apply the *Known Partners are Safe Partners* heuristic when deciding whether or not to engage in unprotected sex. As discussed above, many studies have found that individuals are more likely to use condoms with new or casual partners. In fact, this heuristic has been endorsed by many health professionals as a sexual safety strategy. Williams et al. (1992), however, point out that although this guideline highlights the importance of knowing

one's partner as a method of reducing risk, it should only be applied if this knowledge is directly relevant to objective STI/HIV risk (e.g., information about sexual history). The common misinterpretation of this guideline has serious implications for STI/HIV transmission.

Indeed, as stated above, the *Known Partners are Safe Partners* heuristic can fail an individual if the new sexual partner is known in a social and emotional sense (e.g., a colleague or a long time friend), but his/her sexual history is not known. As Adam (2006) discusses, this sense of 'knowing' a partner can result in individuals inappropriately giving themselves permission to engage in unsafe sexual practices. This lack of STI/HIV relevant information makes unprotected sex with such a partner potentially as risky as sex with an unknown partner. However, this is not the only commonly used sexual safety heuristic that can be misapplied and result in increased risk.

Misovich et al. (1997) discuss the problematic use of four main AIDS (and STI) prevention heuristics: 1) the previously mentioned *Known Partners are Safe Partners* heuristic, 2) the *Monogamous Relationships are Safe* heuristic, 3) the *Trusted Partners are Safe Partners* heuristic, and 4) the *It's Too Late* heuristic. Both the *Monogamy* heuristic and the *Too Late* heuristic are particularly relevant for justifying unprotected sex in longer-term relationships, where there may be a pledge or understanding (by one or both partners) of maintaining monogamy, or where regular condom use was not established early in the relationship and now beginning to use condoms later in the relationship is not seen to be useful. The *Known Partners* and *Trusted Partners* heuristics are most relevant to early, or first time, sexual encounters between new sex partners, where individuals will attempt to determine whether or how strongly to insist on

condom use. Following the logic of these two heuristics, if an individual determines that a particular partner is *known* to her, perhaps from a previous social context (i.e., a classmate, a co-worker, a past partner, a friend), she will likely decide that engaging in condom negotiation is less important. Additionally, if she feels that she *trusts* this partner (an extremely subjective judgement that may not be based on actual sexual health related information; e.g., Williams et al., 1992), the individual will likely, again, determine that engaging in condom negotiation is less important.

Thorburn, Harvey, and Ryan (2005) also examined these four problematic HIV/AIDS heuristics in order to understand how they may be related to HIV prevention barriers among African-American youth. They recruited a sample of heterosexual couples as well as a sample of single heterosexuals and conducted structured individual interviews. The sample of couples reported a heavy reliance on the *Monogamy* heuristic while the single participants displayed a strong reliance on the *Known Partners* and *Trusted Partners* heuristics. In particular, it was a found that participants who endorsed the *Known Partners* heuristic had greater incidences of unprotected sex in the past three months, were less likely to have used a condom during their last vaginal sexual encounter, and used condoms during vaginal sex less frequently overall. Alarmingly, these findings suggest that, not only do individuals rely on these heuristics in their sexual decision making, but that heuristics associated with knowing and trusting a partner will replace, or at least reduce, the perceived need to engage in HIV/STI protective behaviour (Thorburn et al., 2005). If individuals do not perceive an STI/HIV risk, they are unlikely to use condoms, even with a casual partner (Afifi, 1999; Hock-Long et al., 2013).

Hock-Long et al. (2013) also identified feelings of trust as being an important reason why their participants did not use a condom with a partner (serious or casual). This is a vital component of the *Known Partners* heuristic: a new sexual partner who is socially familiar will likely incite a higher level of trust, which becomes a substitute for safer sex behaviour (Harvey et al., 2006). The more an individual trusts his sexual partner, the less likely he is to perceive harm (Kline et al., 1992; Misovich et al., 1997), and the less likely he will be to engage in condom negotiation.

Condom Negotiation

As mentioned above, unlike other health behaviours (like smoking cessation or diet), using a condom during sex requires some amount of dyadic cooperation and negotiation (Metts & Fitzpatrick, 1992). Noar, Morokoff, and Harlow (2002, p. 712) state that condom negotiation "refers to the ability to persuade a partner to use a condom." This is most likely not the result of a single skill, but relies instead on a set of skills, including both verbal and non-verbal communication strategies. Developing strong condom negotiation skills is extremely important for persons of all gender identities, as anyone can be susceptible to the influence of a sexual partner who does not want to use a condom (Smith, 2003).

Debro, Cambell, and Peplau (1994) distilled a set of six common strategies used by heterosexual college students to influence a partner to use a condom: *reward* (a promise to provide positive consequences if the partner uses a condom), *emotional coercion* (a threat to use, or the use of, negative affective consequences, e.g., begging), *risk information* (the presentation of information about the risks of STIs/HIV), *seduction* (the use of sexual arousal to distract or direct one's partner to use a condom), *deception*

(using false information), and *withholding sex*. Noar et al. (2002) also suggested the inclusion of the following three additional condom influence strategies. *Relationship conceptualizing* (e.g., using care and/or concern for the partner or the relationship – for example, from Kline, Kline, and Oken (1992), telling a partner "if you truly loved me, you would agree to use a condom"). *Autocracy* – using one's position of power in the relationship to demand or insist on condom use (e.g., "because I say so") was also suggested. Finally, Noar et al. (2010) suggested the *direct request* strategy, where no manipulation is used; condom use is simply and directly requested. Noar et al. (2010) examined this list of nine categories of condom influence strategies, using the Condom Influence Strategies Questionnaire (CISQ). This scale was developed to determine the construct validity of the nine strategies outlined above, and to examine how these strategies relate to factors thought to be essential to condom negotiation (e.g., sexual assertiveness, condom self-efficacy, partner communication) as well as intentions to use condoms and past condom use habits. Noar et al. (2010) found that sexual assertiveness and condom self-efficacy were both strongly related to the CISQ – this makes intuitive sense, as the CISQ was designed to examine condom use strategies that rely heavily on sexual (especially condom) assertiveness and condom self-efficacy. Additionally, it was found that participants who endorsed strategies on the CISQ also reported higher condom use and greater intentions to use condoms. Further, this study also indicates that some condom insistence strategies may be more effective than others; for instance, the subscales most frequently and consistently related to condom use and condom use intentions were *withholding sex*, *direct request*, and *seduction* – although it may also be

the case that these strategies are preferred by more effective condom users (more empirical testing is needed to determine the directionality of the relation).

Noar et al. (2010) point out that the choice of strategy, as well as its effectiveness, may depend on the nature of the relationship (a factor not explored in their study). The choice and effectiveness of a strategy varies depending on whether the individual is preparing to have sex with a new or a long-time partner, or depends on how well the individual knows this partner. The findings of Noar et al. (2010) also indicate a gender difference in the endorsement of different condom influence strategies: women were more likely to endorse strategies such as: *withholding sex, direct request, risk information,* and *relationship conceptualizing*. The authors point out that men (particularly heterosexual men) may rely on fewer strategies because condom use for women relies significantly more upon negotiating their use with their partner. Another concept worth exploring, one that was beyond the scope of the Noar et al. (2010) study, is an investigation into the simultaneous or sequential use of different condom influence strategies. Individuals may invoke a number of strategies simultaneously (e.g., using seduction with relationship conceptualizing), and/or may invoke different strategies at different stages of the negotiation process until one strategy (or a combination) is successful.

In their qualitative analysis of sexual risk taking in college students, Downing-Matibag and Geisinger (2009) found that, although most of their participants did believe using condoms would protect them from STI/HIV transmission, some expressed concern that insisting on using a condom might interfere with them successfully having sex with a partner, or that it would interfere with their enjoyment. Individuals may believe, without

prior discussions of the topic, that their sexual partners would not want to use condoms (Fisher, Fisher, & Rye, 1995), and thus inhibit themselves from beginning the process of condom negotiation. Afifi (1999), Cannin et al. (1999) and Umphrey and Sherblom (2007) all point out that individuals may also have concerns about (and wish to avoid) appearing promiscuous or distrustful toward a (potentially) new partner.

Clearly condom negotiation and sexual decision-making are complex processes that are vulnerable to or affected by many contextual and personality factors present in a sexual situation. Sexual myopia may lead an individual to discount inhibitive cues (such as the hypothetical risk of unwanted pregnancy of STI/HIV transmission), and to attend more strongly to instigatory cues (such as an attractive and willing partner) (Blanton & Gerrard, 1997; Ditto et al., 2006; Loewenstein, 1996; Singer & Toates, 1987; Toates, 2009). Sexual myopia may also encourage a reliance on problematic heuristics (Gold, 2006; Shuper & Fisher, 2008), and may interact with factors such as relationship motivation and partner familiarity to encourage individuals to perceive their sexual partner as low risk. Further, sexual myopia may have an association with individuals' meta-motivational state, resulting in more rebelliousness and a greater concern with enjoying the moment (Gerkovich, 2001; Skakoon-Sparling & Cramer, 2014). In addition, the familiarity of new sexual partners may influence individuals to view them in a more favourable light and judge them to be lower risk for STI/HIV transmission (Buysse, 1998; Comer & Nemeroff, 2000; Downing-Matibag & Geisinger, 2009; Williams et al., 1992). Such an effect may be further complicated by an individual's level of relationship motivation. A strong sense of relationship motivation may discourage an individual from risking the establishment of a new relationship by

discussing topics related to sexual safety or insisting on condom use, because this might give a new sexual partner cause to question his/her integrity or the new relationship (Hammer et al., 1996; Zawacki et al., 2009). An investigation into the associations among such contextual factors as sexual arousal and partner familiarity, as well as personality factors such as meta-motivational state and relationship motivation will be essential to increasing our understanding of the factors influencing sexual decision-making and condom negotiation among new couples.

The Current Studies

Three factors – sexual arousal, relationship motivation, and partner familiarity – likely play an important role in how individuals engage in sexual decision-making. These factors also likely influence their reliance on problematic heuristics, whether or not they engage in condom negotiation, and the strategies they choose to use within the context of a sexual encounter. The aim of the current studies was to investigate the impact of these factors, as well as the role meta-motivational states may play in the processes of condom negotiation and sexual health decision-making among young women and men.

Given that sexual arousal may overwhelm an individual's conscious processing system and generate a myopic bias in favour of instigatory cues (Janssen et al., 2000; Loewenstein, 1996; Singer & Toates, 1987; Toates, 2009), it is clear that sexual arousal plays a very important role in predicting sexual risk-taking among men and women. Additionally, because sexual arousal is such a critical element in consensual sexual encounters (Areily & Loewenstein, 2006; Norris et al., 2004, Shuper & Fisher, 2008), it is important to understand how it may interact with other variables, such as partner

familiarity and relationship motivation. It has been discussed that relationship motivation may facilitate risk-taking in situations where a goal to establish a long-term romantic relationship competes with sexual safety goals (Zawacki et al., 2009). An individual high in relationship motivation may feel more uncomfortable discussing sexual history or engaging in condom negotiation because these activities, though essential to practicing safer sex, may be seen as a threat relationship establishment and maintenance and may affect his/her appeal to a new romantic partner. Thus, because condom use may be seen as a barrier to establishing intimacy, the strength of relationship motivation may increase sexual risk taking (Afifi, 1999; Bell et al., 2007; Buysse, 1998; Umphrey & Sherblom, 2007; Zawacki et al., 2009). However, it is not clear how relationship motivation may interact with partner familiarity, particularly under the influence of sexual myopia. When investigating sexual behaviours and risk taking with new partners, it is essential that a distinction be drawn between familiar and unfamiliar new partners. Though individuals may be able to recognize that unprotected sex with a complete stranger would be highly risky, the literature has shown that familiarity can be built quickly, and that increased familiarity leads to errors in sexual health decision making that may encourage sexual risk-taking (Buysee, 1998; Comer & Nemeroff, 2000; Downing-Matibag & Geisinger, 2009; Kelly & Kalichman, 1995; Swann et al., 1995; Williams et al., 1992; Zawacki et al., 2009). Since all three factors (sexual arousal, relationship motivation, and partner familiarity) are likely to be present, and impose varying degrees of influence during consensual sexual encounters with new partners, developing a better understanding of the strength of their influence is essential. Additionally, understanding the weight of meta-motivational factors will further enhance our understanding of how motivation may also

interact with contextual variables to influence sexual decision-making. Certain meta-motivational states have been associated with increased sexual risk-taking; in particular, the enjoyment oriented paratelic state of the means-end domain and the rebellious negativistic state of the rules domain (Apter, 2001; Gerkovich, 2001; Lafreniere et al., 2013). Much more work is needed to explore the nature of the association of meta-motivational states with sexual risk-taking and decision-making.

The present project aimed to expand the research on safer-sex practices by investigating the effects of sexual arousal, relationship motivation, partner familiarity, and the meta-motivational paratelic and negativistic states on decision-making and condom negotiation in men and women. There were two main goals for this research. The first was to examine the associations between relationship motivation and meta-motivational state with individuals' decision making during a romantic encounter; including whether to engage in condom negotiation, strategies employed, and perceptions about a hypothetical partner's safety and wishes for sexual safety. The second goal was to determine how sexual arousal, relationship motivation, and partner familiarity interact and influence decisions about condom use. To accomplish these goals, two studies were developed.

Study 1 examined the potential gender differences in condom negotiation strategies among men and women with hypothetical new sexual partners. This study also examined the influence of meta-motivational state dominance and relationship motivation on sexual health decision-making. I hoped to determine whether men (regardless of sexual orientation) would perceive their partners as being more interested condom use than would women. I also aimed to determine whether men and women would rely upon

different strategies to request and insist upon condom use with a reluctant partner. Based on the gender differences seen in condom negotiation strategies by Noar et al. (2010), I hypothesized (Hypothesis 1) that, compared to women, men would perceive their partners as being more interested in condom use, and men would be less likely to reference relationship factors when negotiating condom use than women.

With Study 1 I also aimed to examine whether individuals experiencing a more goal-oriented (telic) meta-motivational state or a stronger social norm conforming (conformist) meta-motivational state would show more sexual risk avoidance in their approach to condom negotiation and insistence. Based on the findings of Skakoon-Sparling and Cramer (2014) and Lafreniere and colleagues (2013), I hypothesized (Hypothesis 2) that condom negotiation would be impacted by meta-motivational state. More specifically, I predicted that participants experiencing a stronger Paratelic state or a stronger Negativistic state would select less assertive strategies (i.e., would be less likely to select the *direct request* or *withholding sex* condom insistence strategies).

Further, I planned to investigate whether individuals who are more motivated by relationship goals (i.e., high in relationship motivation) are more willing to engage in unprotected sex. Based on the findings of Skakoon-Sparling and Cramer (2014) and Zawacki et al. (2009), I hypothesized (Hypothesis 3) that participants who scored higher on a measure of relationship motivation would be more willing to engage in hypothetical unprotected sex, regardless of their condom-use assertiveness, particularly with a more familiar partner.

Study 2 explored the factors or mechanisms associated with motivation to engage in safer sex and HIV preventive health behavioural skills. This study examined how the

contextual cues of sexual arousal and partner familiarity, as well as participants' relationship motivation, affect sexual health decision-making. I hoped to learn whether sexually aroused men and women who score high in relationship motivation would show increased sexual risk-taking intensions with more familiar partners. Based on the findings of Comer and Nemeroff (2009), who found that individuals have difficulty recognizing objective risk with partners who feel emotionally close, it was hypothesized that partner familiarity would significantly increase sexual risk-taking intentions, since we judge familiar individuals as *safer* (Williams et al., 1992), but that this effect would be enhanced by sexual arousal and impacted by participants' relationship motivation. Specifically, I hypothesized (Hypothesis 4) that participants experiencing higher levels of relationship motivation would show significantly more permissive intentions, particularly with hypothetically familiar partners. Additionally, based on the preliminary findings of Zawacki et al. (2009), which demonstrated a myopic effect of alcohol intoxication in women, I hypothesized (Hypothesis 5) that sexually aroused participants with higher levels of relationship motivation would show significantly more permissive intentions with familiar, but not with unfamiliar partners.

Finally, I also aimed to determine whether individuals who score high in relationship motivation would also be more concerned that insisting on condom use could interfere with the mood of the sexual encounter and the sense of intimacy. Based on the work of Afifi (1999) and Umphrey and Sherblom (2007), which suggested that condom negotiation may be perceived as a threat to relationship goals, I hypothesized (Hypothesis 6) that participants with higher levels of relationship motivation would show more

concern that insisting on condom use would interfere with intimacy and relationship establishment.

STUDY 1 - METHOD

Participants.

Participants for this study ($N = 440$) were recruited using two different online recruitment strategies in an effort to achieve a broader demographic sample. The first set consisted of 307 participants (101 heterosexual women, 104 heterosexual men, and 102 men who have sex with men) who were recruited using Amazon's Mechanical Turk system (MTurk, https://www.mturk.com/mturk). In general, participants recruited using Mechanical Turk tend to be more demographically diverse than a university undergraduate student sample and have been found to produce data as reliable as participants recruited through more traditional means (Buhrmester, Kwan, & Gosling, 2011). Participants recruited through MTurk were compensated 75¢ for their time. An additional sample of 133 participants (76 heterosexual women, 53 heterosexual men, and 4 men who have sex with men) was recruited using the University of Windsor Psychology Participant Pool system. Participants recruited in this fashion received .5 credits that could be applied to any eligible psychology course.

Participant eligibility was determined using a brief screening survey at the beginning of the study for MTurk participants, or using the SONA screening questions for Psychology Pool participants. In order to be eligible, participants had to be between 18 and 25 years of age, must have engaged in consensual vaginal or anal sex at least once ever, and must have self-identified as either cis-gendered (non trans-sexual) men or cis-gendered (non trans-sexual) women. At the time of screening, eligible participants also

had to indicate they were not currently involved in a long-term monogamous relationship – participants who were married or involved in monogamous, long-term romantic relationships (longer than one year) were not eligible to participate as it may have been challenging for them to envision themselves in the study scenarios. Because sexual safety practices differ greatly for women who have sex with women, cis-female participants were only eligible if they self-identified as either attracted to men only or to both men and women equally (bisexual), while cis-male participants were eligible if they identified as attracted to women (MSW), both, or men only (MSM). Due to the sensitive nature of this study, protecting the confidentiality of participants was a priority; all collected data were identified using only participant numbers, which were not associated with participant names or email addresses.

MTurk participants ranged in age from 18 to 25 years (M = 22.9, SD = 1.80), and 85% of the sample self-identified as single. Forty-two percent of the sample indicated that they were having no sexual relations, and 45% of the sample indicated that they were, but not with any exclusive partner(s). The vast majority of this sample indicated their current country of residence was the United States (99%). In terms of ethnicity, this sample primarily identified as white (72%). Thirty-four percent of MTurk respondents indicated that over the past three months they tended to use condoms "sometimes" or less frequently. See summary (Table 1) for demographic details.

Table 1

Demographics Summary - MTurk Sample

Variable	Response	*n* / % of *N*
Relationship Status	Single	260 / 85%
	New/Casual	46 / 15%
Sexual Relationship Status	Not having sex	130 / 43%
	Having sex, but no exclusive partner	139 / 46%

	Exclusive relationship with outside partners	8 / 3%
	Exclusive relationship with no outside partners	29 / 10%
Country of Residence	UK	2 / 1%
	US	303 / 99%
Ethnicity	White	219 / 72%
	Black	28 / 9%
	Latin	14 / 5%
	Multi-ethnic	17 / 6%
	Other	28 / 9%
Condom Use in Past 3 Mo	Sometimes or less frequently	103 / 34%
	Often or more frequently	201 / 66%

Pool participants ranged in age from 18 to 25 years of age (M = 20.02, SD = 1.55), and 64% of this sample identified as single. Thirty-seven percent of the total sample indicated that they were having no sexual relations and 29% indicated that they were, but not with any exclusive partner(s). This entire sample indicated that their current country of residence was Canada (100%). In terms of ethnicity, this sample primarily identified as white (82%). Forty-eight percent of Pool respondents indicated that over the past three months they tended to use condoms "sometimes" or less frequently. See summary (Table 2) for demographic details.

Table 2

Demographics Summary - Pool Sample

Variable	Response	n / % of N
Relationship Status	Single	85 / 64%
	New/Casual	24 / 18%
	Relationship less than 1 year	22 / 17%
	Relationship 1 year or more	2 / 2%
Sexual Relationship Status	Not having sex	49 / 37%
	Having sex, but no exclusive partner	43 / 32%
	Exclusive relationship with outside partners	2 / 2%
	Exclusive relationship with no outside partners	29 / 10%
Country of Residence	Canada	133 / 100%
Ethnicity	White	109 / 82%
	Black	6 / 5%

	Latin	2 / 2%
	Multi-ethnic	4 / 3%
	Other	12 / 9%
Condom Use in Past 3 Mo	Sometimes or less frequently	63 / 48%
	Often or more frequently	70 / 53%

Materials.

Computer Software

The study was administered in a web-based format using *Fluid Surveys*. All study material was presented using the *Fluid Surveys* platform.

Hypothetical Scenario

Participants were invited to read and project themselves into a vignette describing a romantic encounter with either a hypothetically more familiar or less familiar partner (See Appendix A). The more familiar partner was described as the long-time roommate of the participant's hypothetical friend's boyfriend. It was established that the participant's hypothetical self and this person went to the same high school, and though they had not been close then, there is a sense of mutual attraction in the present time. The less familiar partner was described as the new roommate of the participant's hypothetical friend's boyfriend. This partner was described as having no prior acquaintance with the participant's hypothetical self. In accordance with Starzyk et al. (2006), this familiarity manipulation attempted to invoke the acquaintanceship dimensions of duration of acquaintance, frequency of interaction, as well as social network familiarity. However, since for both types of partner sexual history would be unknown, unprotected sex with either hypothetical partner should objectively be considered a risky decision (Comer & Nemeroff, 2000).

The scenario described the encounter beginning with a meeting at a party with mutual friends, leading to romantic seclusion where condom negotiation would take place. Participants rated their feelings and likelihood of choosing particular courses of action. This scenario was modified from an older version of a dating scenario, used by Macri et al. (2012). The scenario was modified for the current study to add more detail and to include a familiarity manipulation. Participants in the current study rated how easy it was to picture themselves in the current scenario on a scale from 1 ('could not see self in scenario at all') to 10 ('could very easily see self in scenario'). Participants generally found it easy to project themselves into the presented scenario (Mean = 8.59, *SD* = 1.73). No significant difference was found between the three gender/sexuality groups in these ratings ($p > .05$). Items presented during the scenario were based on current research in the areas of sexual assertiveness (e.g., Morokoff et al., 1997), condom insistence strategies, and condom negotiation (e.g., Noar et al., 2010).

Motivational State Assessment

After finishing the scenario, participants completed the Telic/Paratelic State Inventory –Modified (T/PSI-M; see Appendix B) to determine their motivational state – telic versus paratelic. The current version of the T/PSI-M was used by Skakoon-Sparling and Cramer (2014) and was found to have good reliability in that study; achieving a Cronbach's alpha score of .87. The T/PSI-RM also showed good reliability in the current study (alpha = .86). Items from the T/PSI-M were intermixed with items from the Negativist-Conformist State inventory (N/CSI; see Appendix B) to determine state balance in this domain of meta-motivation as well. The N/CSI was derived from the NCSI, a conformity/negativism dominance scale developed by Del Pup and Cramer

(2014). The state measure used for the current study underwent significant item restructuring from the original NCSI version, it was also streamlined from 15 items to 10 and the scale was expanded to 9 points to increase the reliability of this measure (Nunnally, 1967). During pilot testing, 124 undergraduate participants (68 female, 56 male) completed the new N/CSI scale: it was found to have acceptable internal reliability (Cronbach's alpha = .76). In the current study the C/NSI was reduced from 10 items to 7 to improve the reliability of the scale (items 5, 6, and 8 were removed); the final scale achieved a Cronbach's alpha of .76, which indicates acceptable internal reliability.

Relationship Motivation

Participants completed a Relationship Motivation Scale (see Appendix C) adapted from both Sanderson and Cantor's (1995) *Social Dating Goals Scale* (used by Zawacki et al., 2009 to assess relationship motivation) and Kindelberger and Tsao's (2014) *Romantic Motivation Scale*. The new Relationship Motivation Scale developed for the current study consists of 15 items examining the importance participants place on forming and maintaining long-term romantic/dating relationships (e.g., "In my dating relationships, I try to spend a substantial amount of time with my girl/boyfriend(s)"), as well as elements of anti-motivation (e.g., "All things considered, it is better to be alone"), which are reverse coded. Responses are rated on a scale of 1 ('disagree strongly') to 7 ('agree strongly'). During pilot testing, the Relationship Motivation Scale was found to have good internal reliability (alpha = .87). Average inter-item correlation was low (.34), with a range from .02 to .64, suggesting that the items included in this scale are measuring unique aspects of the construct of relationship motivation. In the current study, the Relationship Motivation Scale was found to have good reliability (alpha = .85).

Syndemic Factors Associated with HIV Risk

Stall et al. (2003) and Starks, Millar, Eggleston, and Parsons (2014) identified syndemic risk factors associated with elevated risk for HIV transmission among gay and bisexual men who have sex with men. The factors included in the current study were: poly drug use, depression, intimate partner violence, and childhood sexual abuse (see Appendix D)

Poly drug use was identified as the use of two or more non-prescription drugs (e.g.: methamphetamine, cocaine, marijuana, etc.) in the 90 days prior to completing the survey. Participants were shown a list of popular drugs and were asked to indicate which ones they had used in the past 3 months. In the current study 2% of MSW, 5% of MSM, and 2% of heterosexual women reported poly drug use. See summary tale (Table 3) for more detail.

Depression was measured using the 10-item version of The Center for Epidemiologic Studies Depression Scale (Andersen, Malmgren, Carter, & Patrick, 1994). Participants responded to items such as "I felt sad" by indicating how frequently they had felt this way over the past seven days (e.g.: less than one day, one to two days, three to four days, five to seven days). This scale has demonstrated good predictive ability and strong psychometric validity in previous studies. In the current study, this scale showed strong internal reliability (alpha = .88). A score lower than 8 on this scale is indicative of having no clinically significant signs of depression. Our sample of MSW, MSM, and heterosexual women all achieved similar average scores on this measure (M = 1.7, SD = .6) indicating relatively low overall incidence of any symptoms of depression in this sample. See summary tale (Table 3) for more detail.

Intimate partner violence was examined using a modified version of the Conflict Tactics Scale (Greenwood et al., 2002). This scale contains three subscales: six items measure experience of psychological or symbolic battering (e.g.: "I have been demeaned in front of others by a partner"), four items measure experience of physical battering (e.g.: "I have been hit with an object by a partner"), and one item measures sexual battering ("I have been forced to have sex by a partner"). Participants were instructed to check off all of the behaviours they had experienced over the past five years. In the current study 25% of MSW, 35% of MSM, and 28% of heterosexual women reported experiencing psychological battering. Additionally, 15% of MSW, 20% of MSM, and 12% of heterosexual women reported experiencing physical battering. Finally, 3% of MSW, 8% of MSM, and 10% of heterosexual women reported experiencing sexual battering. See summary tale (Table 3) for more detail.

Childhood sexual abuse was determined using an item designed to identify both childhood/adolescent and adult non-consensual sexual experience (NCSEs). Participants were asked to indicate if they had ever been forced or frightened by someone into doing something sexually (e.g., sexual assault, rape, sexual abuse, sexual victimization, sexual violence, sexual exploitation, etc.) and whether this had occurred when they were a child/adolescent (18 years of age or younger), when they were an adult (over 18 years of age), at both times in their lives, not at all, or if they were unsure. In the current study 1% of MSW, 7% of MSM and 8% of heterosexual women reported experiencing at least one NCSE in adulthood; 3% of MSW, 7% of MSM, and 9% of heterosexual women experienced at least one in childhood; and less than 1% of MSW, 5% of MSM, and 5% of

heterosexual women reported experiencing at least one as an adult and as a child. See summary tale (Table 3) for more detail.

Table 3

Distribution of Syndemic Factors

Factor	MSW	MSM	Women
Depression Score	*M* = 1.69, *SD* = .56	*M* = 1.69, *SD* = .60	*M* = 1.74, *SD* = .61
Poly Drug Use	3 / 1.9%	5 / 4.7%	3 / 1.7%
Sexual Battery	5 / 3.2%	8 / 7.5%	18 / 10.2%
Psychological Battery	39 / 24.8%	37 / 34.9%	49 / 27.8%
Physical Battery	23 / 14.6%	21 / 19.8%	21 / 11.9%
NCSE as a Child	4 / 2.5%	7 / 6.6%	15 / 8.5%
NCSE as an Adult	2 / 1.3%	7 / 6.6%	14 / 8.0%
NCSE as a Child and as an Adult	1 / 0.6%	5 / 4.7%	9 / 5.1%

Procedure.

Participants who clicked through the invitation link viewed a brief introduction screen. For participants recruited through MTurk, they completed a brief screening pre-survey, which collected demographic information: age, gender, relationship status, and sexual attraction. Participants were screened as outlined in the section above. Those who did not meet eligibility criteria were sent to the termination screen and exited the survey. Eligible MTurk participants were shown the consent form to review. Participants recruited through the Psychology Participant Pool were pre-screened by the participant pool system and eligible students who decided to participate were taken directly to the consent form when they opened the survey link.

Female and MSM participants read a scenario depicting a romantic encounter with a hypothetical male partner; MSW participants read a scenario depicting a romantic encounter with a hypothetical female partner. After completing the scenario, all

participants completed the two meta-motivational state inventories, followed by the Relationship Motivation Scale. Finally, participants were asked to provide demographic information about the region in which they reside and their sexual history and practices (see Appendix E) as well as the depression inventory, measure of drug use, and measures of past abuse and NCSEs (see Appendix D). After completing the survey, participants viewed an information screen with further information about the study and links to local resources. MTurk participants received a proof of completion code on the information screen, which allowed them to claim their remuneration. Participants recruited through the participant pool were taken to a separate landing page where they entered their name and student number in order to be awarded their credit in the SONA system. This allowed for the collected data to be kept separate from participants' identifying information.

STUDY 1 - RESULTS

Participant Response to the Vignette

Overall, participants did not report difficulty projecting themselves into the scenario. Ease of projection was scored on a 10-point Likert scale, from 1 ("not able to project myself into the scenario at all") to 10 ("could very easily project myself into the scenario"): $M = 8.32$, $SD = 2.02$. An independent one-way ANOVA indicated that this rating did not differ by gender/sexuality group [*Welch* F (2, 282.4) = 1.25, $p > .05$]. Additionally, participants rated the scenario as feeling highly realistic ($M = 8.00$, $SD = 1.90$); an independent one-way ANOVA indicated that this rating also did not differ by gender/sexuality group [F (2, 436) = 2.09, $p > .05$]. There was a significant difference in how sexually arousing participants rated the scenario based on their gender/sexuality

group [*Welch F* (2, 272.5) = 17.19, $p < .001$], such that MSW ($M = 6.46$, $SD = 2.40$, $p < .01$) and MSM ($M = 7.00$, $SD = 2.12$, $p < .001$) both rated the vignette as being significantly more sexually arousing than female participants ($M = 5.32$, $SD = 2.75$). See summary table (Table 4) for more detail.

Table 4

Summary of Participant Response to the Vignette

Measure	MSW	MSM	Women
Ease of Projection	$M = 8.3$, $SD = 2.0$	$M = 8.5$, $SD = 1.5$	$M = 8.2$, $SD = 2.3$
Realism	$M = 7.8$, $SD = 2.0$	$M = 8.2$, $SD = 1.8$	$M = 8.1$, $SD = 1.8$

Partner Familiarity Manipulation.

No significant differences were found based on the described familiarity of the hypothetical partner across any of the target items (*p*s >.05). In order to better understand the failure of the familiarity description manipulation to emerge as a predictive factor, a second sample of participants (the Pool sample) was asked an additional question. After completing the scenario, participants recruited from the Psychology Participant Pool were asked to recall the point in the scenario when they arrived at the home of the hypothetical partner (before having sex), and indicate how familiar this person would feel to them at this point using a 10-point Likert scale (1 = 'not at all familiar', 10 = 'familiar to a great extent'). No significant difference was found in familiarity ratings between the more familiar ($M = 4.80$, $SD = 1.70$) and less familiar ($M = 5.00$, $SD = 2.20$) hypothetical partners ($p > .05$).

To evaluate the effect of familiarity in this study, the familiarity ratings of the Participant Pool group were analysed by dividing responses to the hypothetical partner (regardless of vignette description version) into two categories: scores of 4.99 and lower were categorized as Low Familiarity ($n_{MSW} = 22$; $n_{MSM} = 0$; $n_{Female} = 45$) and scores of 5.00 and higher were categorized as High Familiarity ($n_{MSW} = 28$; $n_{MSM} = 3$; $n_{Female} = 21$). This dichotomization was completed to allow for group mean comparisons (i.e., *t* testing, an analyses that functions well with smaller sample sizes). This familiarity measure was analyzed separately for the subsequent variables, since it represented a subset of the overall data.

Predictor Variables

The following set of 17 variables were entered into multiple linear regression analyses in order to determine which would emerge as the best predictors of responses to the target scenario questions. The six primary predictor variables of interest entered were: gender/sexuality group (MSM, MSW, Women), Relationship Motivation (continuous measure), Conformity/Negativism State Balance (continuous measure), Telic/Paratelic State Balance (continuous measure). Eight additional variables were also entered into each model. These included not only the syndemic risk factors identified above (poly drug use, depression, intimate partner violence, and NCSE [as a child or as an adult]), but also age at first consensual sexual experience (sexual debut at 14 years of age or younger has been linked with increased risk taking behaviour in men and women; e.g., Kastbom, Sydsjö, Bladh, & Priebe, 2014). Whether or not a condom was used at participants' last sexual encounter was included, as well as responses to the item on condom use frequency over the past three months. Subjective experience of sexual

arousal (rated on a scale of 1 = "not at all aroused" to 10 = "the most sexually aroused I could be") was also included as a predictor variable.

Hypothesis Testing

Interest in Condom Use

As it became clear in the scenario that sex was likely to occur, participants were asked to estimate how much they would like to use a condom with their hypothetical partner (0 = 'not at all', 100 = 'very much'), as well as how much they thought their hypothetical partner would want to use a condom for this encounter (0 = 'not at all', 100 = 'very much').

A multiple linear regression was undertaken to examine variance in participant interest in condom use in the hypothetical scenario for 439 participants, using the Stepwise method (see Table 5 for results). A greater frequency of condom use, stronger Conformist state, older age at first consensual sexual experience, and stronger Relationship Motivation were associated with an increased stated interest in condom use. Having experienced at least one NCSE as an adult was associated with decreased stated interest in condom use. Gender/Sexuality group (female and MSM) was also identified as a significant predictor.

Table 5

Own Interest in Condom use

Predictor Variable	R^2	Adj. R^2	*F*	*p*	Gradient	*t*	*p*
Model	0.256	0.242	17.85	<.001			
Condom Use Frequency in past 3 mo					3.63	6.87	<.001
Female Gender					18.58	6.22	<.001
Conformity/Negativism State					-3.16	-3.53	<.001
Depression					8.07	3.6	<.001
Age at First Consensual Sex Experience					1.93	3.03	0.003
MSM					10.02	2.92	0.004
NCSE as an Adult					-13.76	-2.34	0.02

Relationship Motivation Score	3.74	2.27	0.024

An independent one-way ANOVA was conducted to explore the significance of gender/sexuality group. This analysis revealed a significant difference based on gender/sexuality for participant's own interest in condom use, *Welch* F^1 (2, 243.12) = 20.11, $p < .001$. A *post hoc* Games-Howell test indicated that MSW ($M = 68.57$, $SD = 36.49$) were less interested in using a condom for sex with the hypothetical partner than either Women ($M = 89.47$, $SD = 21.37$, $p < .001$) or MSM ($M = 81.75$, $SD = 27.02$, $p < .01$). Due to concerns about the variance in the data, I also conducted a Kruskal-Wallis test (the non-parametric equivalent of an ANOVA) to confirm this result. The Kruskal-Wallis test confirmed a significant difference between gender/sexuality groups: H (2) = 41.34, $p < .001$.

Using an independent *t*-test, it was found that participants were much more interested in using a condom if they rated the hypothetical partner as Less Familiar ($M =$ 85.75, SD = 27.54 than More Familiar ($M = 69.54$, $SD = 35.70$), Levene's test = 10.20, $p < .01$; t (93.56) = 2.71, $p < .01$. This result was confirmed by a Mann-Whitney U test (the non-parametric equivalent of an independent *t*-test): $U = 1196.50$, $N_1 = 67$, $N_2 = 52$, $p < .01$.

A multiple linear regression was undertaken to examine variance in perceived hypothetical partner's interest in condom use for 439 participants, using the Stepwise method (see Table 6). A greater frequency of condom use, stronger Telic state, and older age at first consensual sexual experience were associated with increased perceived

[1] Applied due to the lack of equality of variance in this analysis; Levene (2,436) = 39.5, $p < .001$

partner interest in condom use. Having experienced Sexual Battery in the past was associated with decreased perceived partner interest in condom use. Gender/Sexuality group (female) was also identified as a significant predictor.

Table 6

Partner Interest in condom Use

Predictor Variable	R^2	Adj. R^2	*F*	*p*	Gradient	*t*	*p*
Model	0.177	0.163	17.5	<.001			
Condom Use Frequency in past 3 mo					3.06	5.65	<.001
Female Gender					-15.22	-5.41	<.001
Age at First Consensual Sex Experience					2.14	3.12	0.002
Telic/Paratelic State					2.46	2.43	0.016
Sexual Battery					-10.86	-1.99	0.048

An independent one-way ANOVA was conducted to explore the significance of gender/sexuality group. This analysis revealed a significant difference in participants' estimation of their hypothetical partner's interest in using a condom by gender/sexuality group, F (2, 436) = 14.60, $p < .001$. A *post hoc* Tukey test indicated that female participants (M = 51.11, SD = 30.66) perceived their hypothetical partner as being significantly less interested in using a condom than did either MSW (M = 61.78, SD = 30.21, $p < .01$) or MSM (M = 70.44, SD = 27.58, $p < .001$). No significant difference in the estimate of their hypothetical partner's interest in condom use was found based on high versus low familiarity rating ($p > .05$).

Interestingly, a different degree of correlation between participant's own interest in condom use and their estimation of their hypothetical partner's interest in condom use was found based on gender/sexual orientation group. In MSW, a significant moderate (Pearson's) correlation was found: higher personal interest in condom use was associated with higher perceived partner interest in condom use: r (157) = .56, $p < .001$. In MSM, a

significant strong (Pearson's) correlation was found: higher personal interest in condom use was associated with higher perceived partner interest in condom use: r (106) = .74, p < .001. In women, a significant but weak (Pearson's) correlation was found: higher personal interest in condom use was associated with higher perceived partner interest in condom use: r (176) = .34, p < .001.

Condom Negotiation Strategies

At two different points in the scenario, respondents indicated which strategy they would use to talk about condom use with the hypothetical partner (the presented options were based on the Noar et al. (2010) methods of influence). A Pearson's χ^2 analysis of responses to the first time participants were asked to select a strategy indicated a significant effect of gender/sexuality group at Time 1: χ^2 (12, N = 438) = 117.89, p < .001, φ = .352 (Gender/Sexuality Identity accounts for 12.39% of the variance in condom negotiation strategy at Time 1). Specifically, it was found that female participants were significantly less likely than either MSM or MSW to choose *No Strategy* (i.e., were less likely to choose to have unprotected sex). Additionally, women in this sample were less likely than either MSW or MSM to choose the *Seduction* method ("I would just keep fooling around and then just put a condom on him when it's time"). Women were significantly more likely than MSW or MSM to select methods such as *Withholding Sex* ("I would make it clear that we're not having sex without a condom"), *Direct Request*, and *Deception* ("I would make up a reason why I want to use a condom tonight, even though my real reason is to protect myself against diseases."). MSM were significantly more likely than MSW or women to select the *Relationship Conceptualization* method ("I

would tell Chris that it would mean a lot and show me how much he cares, if we were to use a condom with me tonight."). Finally, MSW were significantly more likely than MSM or women to select *No Method* ("I would be comfortable having unprotected sex tonight") and the *Seduction* method. MSW were also significantly less likely than MSM or women to select the *Withholding Sex* method or the *Direct Request* method. See summary table (Table 7) for more detail.

Table 7

Summary of Condom Insistence Strategies at Time 1 - Gender/Sexuality Identity

Response	MSW	MSM	Women
None - Would Have Unprotected Sex	26 / 17%	13 / 12%	3 / 2%
Withholding Sex	18 / 12%	22 / 21%	70 / 40%
Direct Request	31 / 20%	23 / 22%	59 / 34%
Seduction	69 / 44%	34 / 32%	15 / 9%
Relationship Conceptualizing	4 / 3%	8 / 8%	4 / 2%
Risk (STI) Information	3 / 2%	3 / 3%	9 / 5%
Deception	6 / 4%	3 / 3%	15 / 9%

Later in the scenario, participants were again asked to select a strategy, this time to convince their resistant hypothetical partner to use a condom. A Pearson's χ^2 indicated a significant effect of gender/sexuality group at Time 2: χ^2 (14, N = 439) = 79.70, $p <$ .001, $\varphi = .294$ (Gender/Sexuality Identity accounts for 8.64% of the variance in condom negotiation strategy at Time 2). At this second point, female participants were less likely than MSM or MSW to select *No Strategy* (agreeing to unprotected sex) or the *Seduction* strategy ("I would get him really sexually excited and then just bring out a condom") and women were again more likely than either MSW or MSM to select *Withholding Sex* as a strategy. MSM were significantly more likely to select the *Deceptive* strategy ("I would tell Chris that I always have sex with condoms, even though sometimes I don't"). Finally, MSW were less likely to select *Withholding Sex* and were more likely to agree to

unprotected sex or to select the *Seduction* strategy. See summary table (Table 8) for more detail.

Table 8

Summary of Condom Insistence Strategies at Time 2 - Gender/Sexuality Identity

Response	MSW	MSM	Women
None - Would Have Unprotected Sex	40 / 26%	13 / 12%	6 / 3%
Withholding Sex	20 / 27%	29 / 27%	81 / 46%
Direct Request	28 / 18%	17 / 16%	29 / 17%
Seduction	42 / 27%	20 / 19%	24 / 14%
Relationship Conceptualizing	7 / 5%	3 / 3%	4 / 2%
Risk (STI) Information	4 / 3%	9 / 9%	9 / 5%
Deception	13 / 8%	13 / 12%	19 / 11%

Gender/sexuality group differences were also examined using responses to the item presented before the first list of condom insistence strategies. This item asked participants to estimate how likely they would be to bring up using a condom during the hypothetical scenario. An independent one-way ANOVA revealed a significant difference based on gender/sexuality for participant's willingness to bring up condom use, *Welch* F^2 (2, 257.61) = 7.76, $p < .01$. Due to concerns about the variance in the data, I also conducted a Kruskal-Wallis test (the non-parametric equivalent of an ANOVA) to confirm this result. The Kruskal-Wallis test confirmed a significant difference between gender/sexuality groups: H (2) = 20.22, $p < .001$. A set of three Mann-Whitney U tests (comparing women with MSW, MSW with MSM, and women with MSM) was conducted to examine group differences. MSW (M = 71.22, SD = 33.45) were significantly less likely to bring up condom use than MSM (M = 79.06, SD = 27.96) (U = 7087.00, N_1 = 157, N_2 = 106, $p < .05$) as well as women (M = 84.22, SD = 25.76) (U =

[2] Applied due to the lack of equality of variance in this analysis; Levene (2,436) = 39.5, $p < .001$

10020.00, $N_1 = 157$, $N_2 = 176$, $p < .001$). There was a marginally significant difference found between women and MSM: $U = 8140.50$, $N_1 = 106$, $N_2 = 176$, $p = .057$

Relationship Motivation and Condom Negotiation

Relationship Motivation Score (RMS) was calculated by averaging together the responses to all 15 scale items. RMS did not differ by gender/sexuality identity ($p > .05$). In order to examine how participants' condom negotiation strategies differed based on RMS, this score was then dichotomized to divide respondents into two categories: scores of 5.01 and higher were categorized as High Relationship Motivation (HRM; n = 304) and scores of 4.99 and lower were categorized as Low Relationship Motivation (LRM; n = 122). Respondents whose average score was exactly 5 were excluded (n = 13), since they scored at the exact midpoint of the scale and thus couldn't be said to be either high or low in terms of relationship motivation.

A Pearson's χ^2 indicated a significant effect of RMS at Time 1: $\chi^2 (6, N = 438) = 15.68$, $p < .01$, $\varphi = .189$. Relationship motivation accounts for 3.57% of the variance in condom negotiation strategy at Time 1. Specifically, it was found that participants who scored low on relationship motivation were significantly less likely (than High RM) to select any condom negotiation strategy (i.e., were more willing to have unprotected sex).

A Pearson's χ^2 indicated a marginally significant effect of RMS at Time 2: $\chi^2 (7, N = 439) = 13.80$, $p = .055$, $\varphi = .177$. Relationship motivation accounts for 3.13% of the variance in condom negotiation strategy at Time 2. Specifically, it was found that participants who scored high on relationship motivation were somewhat less likely (than

Low RM) to select *Deception* as a condom negotiation strategy and were more likely to select the *Direct Request* strategy. See summary table (Table 9) for more detail.

Table 9

Summary of Condom Insistence Strategies - Relationship Motivation

Response	Time 1		Time 2	
	Low RM	High RM	Low RM	High RM
None - Would Have Unprotected Sex	20 / 16%	22 / 7%	21 / 17%	38 / 12%
Withholding Sex	31 / 25%	79 / 25%	37 / 30%	93 / 29%
Direct Request	25 / 21%	88 / 28%	13 / 11%	61 / 19%
Seduction	36 / 30%	82 / 26%	28 / 23%	58 / 18%
Relationship Conceptualizing	2 / 2%	14 / 4%	5 / 4%	9 / 3%
Risk (STI) Information	1 / 1%	14 / 4%	9 / 7%	13 / 4%
Deception	7 / 6%	17 / 5%	6 / 5%	39 / 12%

Telic/Paratelic Meta-Motivational State Balance and Condom Negotiation Strategy.

A Telic-Paratelic state balance (TPB) score was calculated by averaging together the responses to all 12 items (after re-verse coding the relevant items). TPB score did not differ by gender/sexuality identity ($p > .05$).

In order to examine how participants' condom negotiation strategies differed based on TPB, TPB was dichotomized to divide respondents into two categories: scores of 4.99 and lower were categorized as High Paratelic ($n = 295$) and scores of 5.01 and higher were categorized as High Telic ($n = 128$). Respondents whose average score was exactly 5 were excluded ($n = 17$), since they appeared to be experiencing the exact midpoint between the telic and paratelic states.

A Pearson's χ^2 indicated no significant effect of TPB at Time 1: $\chi^2 (6, N = 421) = 9.18$, $p = .164$, $\varphi = .148$. A Pearson's χ^2 indicated a marginally significant effect of TPB at Time 2: $\chi^2 (7, N = 422) = 13.16$, $p = .068$, $\varphi = .177$. Telic/Paratelic State Balance

accounts for 3.13% of the variance in condom negotiation strategy at Time 2. Specifically, it was found that participants who scored more strongly Paratelic were somewhat less likely to select any condom negotiation strategy (i.e., were more willing to have unprotected sex). See summary table (Table 10) for more detail.

Table 10

Summary of Condom Insistence Strategies - Telic/Paratelic State

Response	Time 1		Time 2	
	Telic	Paratelic	Telic	Paratelic
None - Would Have Unprotected Sex	5 / 4%	35 / 12%	7 / 6%	51 / 17%
Withholding Sex	40 / 32%	66 / 22%	44 / 35%	83 / 28%
Direct Request	33 / 26%	74 / 25%	23 / 18%	46 / 16%
Seduction	33 / 26%	81 / 28%	24 / 19%	58 / 20%
Relationship Conceptualizing	5 / 4%	11 / 4%	5 / 4%	8 / 3%
Risk (STI) Information	5 / 4%	10 / 3%	8 / 6%	13 / 4%
Deception	6 / 4%	17 / 6%	15 / 12%	29 / 10%

Conformity Negativism Meta-Motivational State Balance and Condom Negotiation Strategy.

The 7 items included C/NSI in the final scale were averaged to obtain an overall Conformity Negativism Balance (CNB) score. CNB score did not differ by gender/sexuality identity ($p > .05$). In order to examine how participants' condom negotiation strategies differed based on CNB, CNB was dichotomized to divide respondents into two categories: scores of 4.99 and lower were categorized as High Conformity ($n = 188$) and scores of 5.01 and higher were categorized as High Negativism ($n = 228$). Respondents whose average score was exactly 5 were excluded ($n = 24$), since they appeared to be experiencing the exact midpoint between the conformist and negativistic states.

A Pearson's χ^2 indicated a significant effect of CNB at Time 1: χ^2 (6, N = 414) = 17.55, $p < .01$, φ = .206. Conformist/Negativistic State Balance accounts for 4.24% of the variance in condom negotiation strategy at Time 1. Specifically, it was found that participants who scored more strongly Negativistic were significantly less likely to select any condom negotiation strategy (i.e., were more willing to have unprotected sex).

A Pearson's χ^2 indicated a significant effect of CNB at Time 2: χ^2 (7, N = 415) = 15.57, $p < .05$, φ = .193. Conformist/Negativistic State Balance accounts for 3.73% of the variance in condom negotiation strategy at Time 2. Specifically, it was found that participants who scored more strongly Negativistic were significantly less likely to select any condom negotiation strategy (i.e., were more willing to have unprotected sex). Additionally, participants who scored more strongly Conformist were more likely to select the *Withholding Sex* strategy. See summary table (Table 11) for more detail.

Table 11

Summary of Condom Insistence Strategies - Conformity/Negativism State

Response	Time 1		Time 2	
	Conformist	Negativist	Conformist	Negativist
None - Would Have Unprotected Sex	8 / 4%	34 / 15%	13 / 7%	43 / 19%
Withholding Sex	56 / 30%	49 / 22%	65 / 35%	57 / 25%
Direct Request	45 / 24%	64 / 28%	33 / 18%	36 / 16%
Seduction	55 / 29%	53 / 23%	40 / 21%	44 / 19%
Relationship Conceptualizing	7 / 4%	9 / 4%	5 / 3%	9 / 4%
Risk (STI) Information	8 / 4%	6 / 3%	10 / 5%	12 / 5%
Deception	8 / 4%	12 / 5%	17 / 9%	22 / 10%

Willingness to Engage in Unprotected Sex

After the first time participants were asked to select a condom influence strategy, they were informed that their hypothetical partner was reluctant to use a condom (they

were also told in the scenario that there might not be a condom available), and the hypothetical partner attempted to convince the participant to have unprotected sex. Participants were then asked in indicate how likely they would be to go along with what the hypothetical partner wanted and have unprotected sex using a 10-point Likert scale (1 = extremely unlikely, 10 = extremely likely). Using an independent *t*-test, it was found that participants were significantly more willing to engage in unprotected sex with the hypothetical partner if they rated the hypothetical partner as More Familiar ($M = 6.1$, $SD = 2.9$ than Less Familiar ($M = 4.1$, $SD = 3.0$), $t\ (117) = 3.62$, $p < .001$.

A multiple linear regression was undertaken to examine variance in willingness to have unprotected sex for 439 participants, using the Stepwise method (see Table 12). A lower frequency of condom use, stronger Negativistic state, lower relationship motivation, and greater experience of sexual arousal were associated with an increased willingness to engage in unprotected sex. Having experienced Physical Battery in the past was associated with increased willingness to engage in unprotected sex. Gender/Sexuality group (female and MSM) was also identified as a significant predictor.

Table 12

Willingness to have Unprotected Sex

Predictor Variable	R^2	Adj. R^2	*F*	*p*	Gradient	*t*	*p*
Model	0.318	0.307	27.77	<.001			
Condom Use Frequency in past 3 mo					-0.428	-8.25	<.001
Female Gender					-2.27	-7.47	<.001
Conformity/Negativism State					0.343	3.79	<.001
Physical Battery					1.14	3.09	0.002
MSM					-1.06	-3.08	0.002
Relationship Motivation					-0.388	-2.35	0.019
Sexual Arousal					0.121	2.32	0.021

An independent 2 (Relationship Motivation: Low RM vs. High RM) by 3 (gender/sexuality group: MSM vs. MSW vs. Female) ANCOVA was conducted in order to further investigate these results. Whether or not participants selected an assertive condom insistence strategy (i.e.: *Withholding Sex* or *Direct Request*) at Time 1 or Time 2 were entered as covariates into the ANOVA model as these variables can be seen as an indirect measure of condom-use self efficacy and general sexual assertiveness (Noar et al, 2010). These were significantly related to participants' willingness to engage in hypothetical unprotected sex [Time 1: F (1, 431) = 6.87, $p < .01$; Time 2: F (1, 431) = 51.36, $p < .001$]; participants who selected a more assertive strategy were less likely to indicate a willingness to have unprotected sex [Time 1: assertive strategy $M = 3.58$, $SD = 2.70$; non-assertive $M = 5.58$, $SD = 3.33$; Time 2: assertive strategy $M = 3.14$, $SD = 2.55$; non-assertive $M = 5.80$, $SD = 3.16$]. After controlling for assertive condom insistence strategy selection, a significant main effect of gender/sexuality groups in terms of willingness to engage in unprotected sex with the hypothetical partner was found [F (2, 431) = 16.85, $p < .001$] as well as a marginally significant main effect of RMS [F (1, 431) = 3.28, $p = .07$].

A *post hoc* Games-Howell analysis indicated that MSW ($M = 6.00$, $SD = 3.22$) reported being significantly more likely to engage in unprotected sex with the hypothetical partner than either Women ($M = 3.30$, $SD = 2.60$, $p < .001$) or MSM ($M = 4.60$, $SD = 3.1$, $p < .01$). This result was confirmed using a set of two Mann-Whitney U tests (comparing women with MSW and MSM with MSW): MSW were significantly more willing to engage in unprotected sex than women ($U = 7241.00$, $N_1 = 157$, $N_2 = 176$, $p < .001$) as well as MSM ($U = 6221.50$, $N_1 = 157$, $N_2 = 106$, $p < .001$). Additionally,

MSM reported being significantly more likely to engage in unprotected sex with the hypothetical partner than Women ($p < .01$); this result was also confirmed by a Mann-Whitney U test ($U = 7108.00$, $N_1 = 106$, $N_2 = 176$, $p < .01$). Furthermore, participants who scored low on relationship motivation were marginally significantly more willing to engage in unprotected sex with the hypothetical partner than those who scored high on relationship motivation ($p = .07$).

There was a significant interaction between gender/sexuality group and relationship motivation [F (2, 431) = 4.07, $p < .05$]. The dataset was split by gender/sexuality group and an independent t-test was conducted comparing High RM and Low RM response patterns. Among MSW and MSM, it was found that participants who scored lower on relationship motivation (MSW: $M = 6.76$, $SD = 2.82$; MSM: $M = 5.42$, $SD = 3.0$) were significantly more likely to show an intention to engage in unprotected sex in the hypothetical scenario (MSW: t (87.3) = 1.99, $p = .05$; MSM: t (101) = 2.06, $p < .05$) than those who scored higher on relationship motivation (MSW: $M = 5.72$, $SD = 3.33$; MSM: $M = 4.10$, $SD = 3.13$). No significant difference ($p > .05$) was found among the female sample, however the means showed a trend toward a slightly higher interest in having unprotected sex among women who scored high on relationship motivation.

Interestingly, among the sub-sample who rated the hypothetical partner as being more highly familiar, female respondents who scored high on relationship motivation ($M = 6.14$, $SD = 2.2$) were significantly more willing to engage in unprotected sex with the hypothetical partner than women who scored lower on relationship motivation ($M = 2.6$, $SD = 3.1$); t (17) = 2.79, $p = .013$. No such difference was found among MSW or MSM in this sub-sample.

Exploratory Analyses

Sexual Assertiveness

Sexual Assertiveness was computed by averaging the scores of a) the likelihood of asking the hypothetical partner to touch them where they want; b) the likelihood of bringing up condom use themselves; c) the reverse coded value of the item asking the likelihood of waiting for the hypothetical partner to touch them where they want (without asking); and d) the reverse coded value of the item asking the likelihood of leaving if the hypothetical partner refused to have protected sex.

A multiple linear regression was undertaken to examine variance in Sexual Assertiveness for 439 participants, using the Stepwise method (see Table 13). A stronger Conformist state and a greater frequency of condom use were both associated with greater sexual assertiveness. Heterosexual men ($M = 49.1$, $SD = 18.4$) showed significantly lower sexual assertiveness than either Women ($M = 57.3$, $SD = 20.7$) or MSM ($M = 61.5$, $SD = 17.5$). No significant difference in sexual assertiveness was found based on high versus low familiarity rating ($p > .05$).

Table 13

Sexual Assertiveness

Predictor Variable	R^2	Adj. R^2	F	p	Gradient	t	p
Model	0.17	0.164	28.6	<.001			
Condom Use Frequency in past 3 mo					2.19	6.26	<.001
MSW					-7.99	-4.31	<.001
Conformity/Negativism State					-2.5	-4.1	<.001

Risk Perception

Risk Perception was assessed using participant responses to the item asking respondents to indicate how risky they felt it would be to have unprotected sex with the

hypothetical partner. A multiple linear regression was undertaken to examine variance in Risk Perception for 439 participants, using the Stepwise method (see Table 14). A greater frequency of condom use, a stronger Telic state, and stronger relationship motivation were associated with an increased perception of unprotected sex with the hypothetical partner being risky. Poly drug use was associated with decreased risk perception. Gender/Sexuality group (MSW) was also identified as a significant predictor.

Table 14

Risk Perception

Predictor Variable	R^2	Adj. R^2	*F*	*p*	Gradient	*t*	*p*
Model	0.226	0.217	24.35	<.001			
Condom Use Frequency in past 3 mo					0.21	5.09	<.001
Telic/Paratelic State					0.335	44.41	<.001
MSW					-0.976	-4.53	<.001
Poly Drug Use					-2.76	-4.29	<.001
Relationship Motivation					0.393	3.05	0.002

An independent one-way ANOVA was conducted to explore the significance of gender/sexuality group. This analysis indicated that members of different gender/ sexuality groups showed significantly different levels of risk perception: *Welch* F^3 (2, 247.60) = 12.47, $p < .001$. This result was confirmed by a Kruskal-Wallis test: H (2) = 20.67, $p < .001$. A *post hoc* Games-Howell test indicated that MSW ($M = 7.00$, $SD = 2.68$) perceived significantly less risk associated with having unprotected sex than either Women ($M = 8.30$, $SD = 1.90$, $p < .001$) or MSM ($M = 8.00$, $SD = 2.30$, $p < .01$). This result was confirmed using a set of two Mann-Whitney U tests (comparing women with MSW and MSM with MSW): MSW perceived significantly less risk associated with

[3] Applied due to the lack of equality of variance in this analysis; Levene (2,434) = 11.12, $p < .001$

engaging in unprotected sex than women ($U = 9861.50$, $N_1 = 156$, $N_2 = 175$, $p < .001$) as well as MSM ($U = 6526.00$, $N_1 = 156$, $N_2 = 106$, $p < .01$). No significant difference in risk perception was found based on high versus low familiarity rating ($p > .05$).

Future Relationship Potential

Participants were also asked to indicate how likely they felt it would be that they would continue to have a relationship with the hypothetical partner if they a) refused to have sex without a condom or b) agreed to have sex without a condom. The responses to these two items were analyzed separately.

A multiple linear regression was undertaken to examine variance in perceived future relationship potential if unprotected sex is refused for 431 participants, using the Stepwise method (see Table 15). Increased sexual arousal experienced while reading the story was associated with a greater perceived likelihood of continuing to date, even if they refused to have unprotected sex and a past experience of Sexual Battery was associated with a lower perceived likelihood. Gender/Sexuality group (MSW) was also identified as a significant predictor.

Table 15

Future Relationship Potential - Refusal of Unprotected Sex

Predictor Variable	R^2	Adj. R^2	*F*	*p*	Gradient	*t*	*p*
Model	0.054	0.047	87.95	<.001			
MSW					0.663	2.61	0.009
Sexual Arousal					0.132	2.79	0.005
Sexual Battery					-1.17	-2.47	0.014

An independent one-way ANOVA was conducted to explore the significance of gender/sexuality group. This analysis indicated that members of different

gender/sexuality groups estimated significantly different likelihoods of continuing a relationship if they refused to have unprotected sex: F (2, 434) = 6.22, $p < .01$. A *post hoc* Tukey test indicated that MSW ($M = 5.53$, $SD = 2.51$) felt that there was a significantly higher likelihood of their continuing to date this person if they refused unprotected sex than women ($M = 4.57$, $SD = 2.50$, $p < .01$) perceived.

A multiple linear regression was undertaken to examine variance in perceived future relationship potential if they were to agree to have unprotected sex for 429 participants, using the Stepwise method (see Table 16). Increased sexual arousal while reading the story and increased relationship motivation were both associated with perceiving an increased likelihood of continuing to date the hypothetical partner if they agreed to unprotected sex. Gender/Sexuality group (female) was also identified as a significant predictor.

Table 16

Future Relationship Potential - Agree to Unprotected Sex

Predictor Variable	R^2	Adj. R^2	F	p	Gradient	t	p
Model	0.105	0.099	16.38	<.001			
Sexual Arousal					0.192	4.44	<.001
Female Gender					-0.84	-3.72	<.001
Relationship Motivation					0.31	2.26	0.024

An independent one-way ANOVA was conducted to explore the significance of gender/sexuality group. This analysis indicated that members of different gender/sexuality groups estimated significantly different likelihoods of continuing a relationship if they agreed to have unprotected sex: *Brown-Forsythe* (2, 399.63) = 13.76, $p < .001$. This result was confirmed by a Kruskal-Wallis test: H (2) = 22.74, $p < .001$. A *post hoc* Games-Howell test indicated that women ($M = 5.81$, $SD = 2.47$) felt that there

was a significantly lower likelihood of their continuing to date than MSW did ($M = 7.04$ $SD = 2.09$, $p < .001$) or than MSM did ($M = 6.81$, $SD = 2.19$, $p < .01$). This result was confirmed using a set of two Mann-Whitney U tests (comparing women with MSW and women with MSW): women perceived a significantly lower likelihood of continuing to the date if they agreed to unprotected sex than MSW ($U = 9763.00$, $N_1 = 173$, $N_2 = 157$, $p < .001$) as well as MSM ($U = 6898.50$, $N_1 = 173$, $N_2 = 105$, $p < .01$). No significant difference in perceived future relationship potential was found based on high versus low familiarity rating ($p > .05$).

Risk Reduction Strategies

After completing the scenario, participants were asked about the likelihood of their engaging in a variety of risk reduction strategies for avoiding the transmission of STIs/HIV in the scenario. Strategies such as using pre-exposure prophylaxis (PrEP) or post-exposure prophylaxis (PEP), suggesting a lower risk activity (e.g., manual stimulation or oral sex), or taking the 'top' position (presented only for MSM)) were presented as separate items and the average of the responses to these items were used as an overall Risk Reduction Score.

A multiple linear regression was undertaken to examine variance in Risk Reduction Score, using the Stepwise method (see Table 17). More frequent condom use during the last 3 months, older age at first consensual sexual experience, a stronger Conformist state, and a higher depression score were associated with an increased likelihood of endorsing risk reduction strategies. No significant difference in risk reduction strategies was found based on high versus low familiarity rating ($p > .05$).

Table 17

Risk Reduction Strategies

Predictor Variable	R^2	Adj. R^2	*F*	*p*	Gradient	*t*	*p*
Model	0.08	0.087	9.08	<.001			
Condom Use Frequency in past 3 mo					0.21	4.35	<.001
Age at First Consensual Sex Experience					0.18	1.85	0.003
Conformity/Negativism State					-0.21	-2.45	0.015
Depression					0.42	2.02	0.044

STUDY 1 – DISCUSSION

The results of this study showed that participants did not systematically differentiate between the less familiar and more familiar partner scenarios. No significant difference in responding was found based on this manipulation. The fact that the partner familiarity description manipulation was unsuccessful is, perhaps, understandable given how quickly familiarity can be established (Swann et al., 1995). It may be that the details of the scenario encouraged participants to intuit a stronger than anticipated sense of familiarity with the 'less familiar' hypothetical partner over the course of the scenario. The scenario describes the participant talking and spending time with the hypothetical partner during the party where they met; this may have encouraged participants to imbue a greater sense of familiarity in the less hypothetically familiar partner. Alternatively, since both partners are merely hypothetical, participants may have found it difficult to distinguish a sense of familiarity for either partner, resulting in participants feeling a similar sense of familiarity, on average, for both partner types. In this way, the format of the scenario may have encouraged participants to find both types of hypothetical partner similarly emotionally safe. The resulting failure to differentiate

between the two hypothetical partners could account for this description condition failing to emerge as a predictive factor: this would be in line with the findings of Comer and Nemeroff (2000), where participants had difficulty perceiving differences in risk between partners who felt emotionally safe and partners who were objectively safe.

However, an examination of the differences in responses based on the sub-sample of participants who responded to the familiarity check item does indicate that partner familiarity may indeed have some impact, as predicted, on an individual's perceptions and behavioural intentions during a sexual encounter. For instance, participants who rated the hypothetical partner as less familiar were also more interested in using a condom in the hypothetical scenario. This suggests that a greater sense of familiarity influences how heterosexual men and women perceive sexual risk taking with new partners. That is, partners who seem less familiar may be seen as a greater risk for STI transmission (hence the increased interest in condom use), while more familiar partners may be seen as a lower risk (particularly since there may be a greater sense of relationship potential with a more familiar partner). It may also be the case that individuals who are more cautious and avoid sexual risk-taking also are slower to warm to a new potential partner and have stricter criteria for developing a sense of familiarity. Note that the sub-sample did not contain a sufficient number of MSM to make any inferences about how the familiarity of new sex partners may impact this population.

The results of this study also show some associations between the included syndemic risk factors and sexual risk taking intentions. Having experienced a NCSE as an adult had a strong negative association with personal interest in condom use and an history of sexual battery (a form of intimate partner violence) had a strong negative

association with perceived partner interest in condom use. These findings are in line with the work by Hughes et al. (2015), which suggests that individuals who have experienced sexual abuse may have difficulty valuing themselves and may feel less worthy of protection from harm (e.g., via the use prophylactics). Having experienced sexual battery in past relationships may also be associated with decreased partner perception of condom interest since Finneran and Stephenson (2014) point out that both experiencing and perpetrating intimate partner violence is associated with engaging in unprotected sex. Thus, participants who have experienced intimate partner violence (like sexual battery) may be more likely to assume that a partner is less interested in condom use, since this was more likely to have been part of their experience during past sexual encounters. A past experience of sexual battery was also negatively associated with the perception of future relationship potential if unprotected sex was refused. This seems logical, given the association between intimate partner violence and unprotected sex. Participants with a history of sexual battery may have had a more negative perception of their future relationship prospects if they were to go against the hypothetical partner's wishes, since this could be seen as a more contentious choice that could invite conflict or even abuse. Finally, it was also noteworthy that poly drug use was negatively associated with the perception that engaging in unprotected sex would be risky. If poly drug users tend to perceive less risk associated with sexual risk-taking behaviours, like unprotected sex with a new partner, this may partially explain their propensity for engaging in such activities.

The results of Study 1 do support Hypothesis 1. A significant difference was found in condom interest between male and female participants: MSW demonstrated a significantly lower stated interest in condom use during the hypothetical scenario than

either women or MSM. This is seen, not only in MSW responses to the item asking specifically how interested participants would be in using a condom, but also in the condom negotiation strategies most preferred by MSW. MSW were most likely to select no strategy (i.e., agreeing to unprotected sex) both times participants were asked to select a condom negotiation strategy. As predicted in Hypothesis 1, both MSW and MSM estimated that their hypothetical partner would have a greater interest in using a condom than women did.

As predicted, MSW, MSM and women each took a different approach in condom negotiation. Besides being more prepared to agree to unprotected sex, when MSW did select a condom negotiation strategy, at Time 1 this was most likely to involve a *direct request* to use a condom ("I would just tell her that I'd like to use condoms tonight.") and at Time 2 MSW were most likely to select a *seduction* strategy ("I would just get her really sexually excited and then bring out a condom."). This result fits with the assertion of Noar et al. (2010), that heterosexual men have an advantage in the negotiation of condom use (since they are the partner who will be wearing the condom) – which they seemed to apply in their selection of condom negotiation strategies in the current study. As the wearer of the condom, heterosexual men may find that the *seduction* method of condom insistence is both effective and less confrontational (especially compared to withholding sex). When applied by heterosexual men in this context, this strategy may be better framed as a more passive and normative strategy than a purposely 'seductive' strategy – since simply donning the condom at the appropriate moment (however this moment is determined) would not be done in order to manipulate the situation or sexual partner(s), but rather to introduce the prophylactic innocuously, without disrupting the

mood of the sexual encounter. It should also be considered that the MSW sample scored significantly lower in sexual assertiveness than women and MSM, which fits with the observed propensity among MSW to select the least assertive condom insistence strategies (including agreeing to have unprotected sex, which would have been in accordance with the hypothetical partner's wishes in this scenario).

In contrast, women were least likely to select no strategy (i.e., least likely to agree to unprotected sex) or to use *seduction* as a strategy to negotiate condom use at both Time 1 and Time 2. Instead, women were most likely to use *withholding sex* ("I would let Chris know that no condom = no sex with me tonight."), a more assertive strategy, for condom negotiation at both Time 1 and Time 2. Interestingly, a wider variety of strategies were more likely to be endorsed by women (than by MSM or MSW) at Time 1 (e.g., *direct request* and *deception*) than at Time 2. This suggests that heterosexual women may find it necessary to switch to withholding sex as a last resort, in order to more assertively insist on condom use if their first strategy fails.

Heterosexual women are faced with gender-based power differentials in many arenas (see Horton & Dworkin, 2013) and the negotiation of sexual safety practices is an arena where heterosexual women can encounter challenging gender-based power dynamics. It may be that the women in this sample selected more assertive strategies in response to previous experience with unwanted unprotected sex or condom coercion, instances where they may have been pressured to have unprotected sex (see Teitelman et al., 2011). By selecting strongly assertive strategies (like withholding sex) heterosexual women may feel better able to defend against any coercive strategies employed by a partner who wishes to have unprotected sex (as was the case in the hypothetical scenario

used in the current study). This would also be in line with Oswalt's (2010) reflection on the apparent mandate in Canadian and US culture, that women should control sexual situations and as such, women are often encouraged to act as gatekeepers. It should be noted that the female participants in the current sample showed greater sexual assertiveness than the heterosexual male participants, as measured by their willingness to ask for both sexual pleasure and sexual safety. It would be reasonable for the assertiveness seen in these domains to be carried over to these women's preference for more assertive condom insistence strategies as well.

It is also noteworthy that MSM displayed a different response pattern than either MSW or women in regards to condom negotiation strategy selection. At Time 1, MSM were more likely (than MSW or women) to select the strategy that used *relationship conceptualization* to persuade their hypothetical partner to use a condom, and at Time 2 MSM were more likely (than MSW or women) to use a *deceptive* strategy. This suggests that MSM may approach condom negotiation in a different way than either heterosexual women or MSW, which likely reflects the more flexible, or complex power dynamic during condom negotiation for MSM, where either partner could be the penetrating partner (or 'top') and wear a condom. Because of this, among MSM neither partner is likely to have been primarily socialized in situations where condom use always depends on negotiating with a male partner for him to use a condom (something that heterosexual women experience; Noar et al., 2010) or in situations where they are the only partner who could/should wear a condom (as heterosexual men experience). This may partially account for the difference in condom insistence strategies seen in this sample, compared to women and MSW.

In the context of the MSM sample, the *deceptive* strategy may not necessarily be employed in order to 'fool' a partner into using a condom, but instead may be invoked as a means to remind a partner that they should both be using condoms and to establish themselves as a condom user[4]. MSM are a known and relatively self-aware priority population for HIV intervention (Public Health Agency of Canada, 2012) and this cultural climate may influence preference of condom insistence strategies. There is a certain degree of mistrust among some MSM, who may perceive that a partner may attempt to deceive them about their STI/HIV status (Leblanc et al., 2014). Thus, MSM who are more risk adverse may still wish to insist on condom use, even with a partner who claims to be HIV negative or claims to have an undetectable viral load (Leblanc et al., 2014). The use of strategies like *relationship conceptualizing* or *deception* may be preferred in this population sample because these strategies are less confrontational than withholding sex or reminding a partner about the risks of HIV/STI transmission. The former strategies may be more representative of efforts to normalize safer sex practices in a way that makes condom insistence less confrontational and less likely to spoil the mood of a sexual encounter.

MSM participants in the current study may also have been attempting to strike a balance between sexual citizenship and self-protection. As Adam (2006) points out, the reality within which persons at higher risk for HIV (like MSM) must navigate is made more complex by the competing ideas around safer sex practices, intimacy, pleasure,

[4] Note that there was no option to select only "I would tell Chris that I always have sex with condoms" – due to the limitations of the study methods we cannot determine how many participants selected the "deceptive" response because it was the closest approximation to their ideal choice, which could have been non-deceptive.

personal responsibility, and community responsibility. Both Davis (2008) and Rangel and Adam (2014) have discussed the sense of altruism and community that many MSM experience and apply to their moral reasoning about sexual safety practices. In these contexts, there is a sense of shared responsibility to prevent HIV transmission. Such a sentiment may also underlie the stronger correlation seen between MSM's own interest in condom use and their perception of the hypothetical partner's interest, as well as the selection of gentler condom insistence techniques (compared with women and MSW). The MSM in the current study may have a higher expectation that their hypothetical partner would be interested in condom use because they see themselves and their partners as members of the same community, with a shared responsibility to prevent HIV transmission. In turn, this higher expectation of partner interest in condom use may have also helped to influence them to select condom instance strategies in line with this sense of shared responsibility.

The results of Study 1 support Hypothesis 2 to some degree. Participants who experienced different meta-motivational states did select different condom insistence strategies. Participants who were experiencing a strong Negativistic state were more likely than those experiencing a more Conformist state to select no strategy (i.e.: were more likely to agree to unprotected sex) and at Time 2, participants experiencing a stronger Conformist state were more likely to select *withholding sex* as a strategy. This pattern of response fits well with the characteristics associated with these two states in Reversal Theory. The Conformist state is associated with a greater degree of following rules and adhering to prescriptive norms (Gerkovich, 2001), thus it should not be surprising that individuals experiencing this state to a stronger degree would select a

more assertive strategy to insist on condom use, despite their hypothetical partner's resistance to condom use. Strongly insisting on condom use conforms to established societal norms about practising safe sex, particularly with a new partner. Similarly, it is not surprising to see that participants experiencing a strong Negativistic state were more willing to flout these same social norms. This finding also makes sense given that in the current study a stronger conformist state was also associated with greater sexual assertiveness, increased interest in condom use, decreased willingness to engage in unprotected sex in the hypothetical scenario, and a greater endorsement of risk reduction strategies. These results point to an association between the conformist state and decreased sexual risk-taking intentions.

A significant difference was only seen based on Telic/Paratelic state balance for condom negotiation strategy at Time 2. At this point, participants who experienced a stronger Paratelic state were more likely to select no strategy and agree to unprotected sex. This result is expected, based on the findings of Skakoon-Sparling and Cramer (2014); as individuals experiencing a stronger Paratelic state are more interested in enjoying the moment and thus may be also less interested in engaging in condom negotiation with a partner who is resistant to condom use. It is no surprise that a stronger Paratelic state was also associated in the current study with a decreased perception that unprotected sex with the hypothetical partner would be risky, given the inclination of individuals experiencing a stronger Paratelic state to focus on immediate pleasure rather than hypothetical risk.

It may also be that some aspects of the scenario invoked a protective frame, which allowed some participants to shift to a stronger paratelic state, where they felt they could

afford to be less concerned about the riskiness of their behavioural intentions. A protective frame is an element that can allow an individual to feel safe reversing to the paratelic state from the telic state (Apter, 2014). A protective frame can exist as physical space (e.g., an amusement park, a movie theatre, or a bedroom), it can manifest from objects (e.g., a condom, a helmet, or a map), and it can arise from more abstract experiences and sensations (e.g., experience, practise/rehearsal, confidence, or trust in another person). It may be that participants inferred lower risk based on the characteristics of the hypothetical partner (as discussed above, individuals tend to assume a partner is STI-free if they do not disclose otherwise: Downing-Matibag & Geisinger, 2009), which may have invoked a protective frame. It may also be that the hypothetical nature of the scenario itself generated a protective frame, since a hypothetical encounter would have a lower emotional impact than a real life encounter (Collett & Childs, 2011).

The results of Study 1 also support Hypothesis 3 (that participants with higher relationship motivation would show greater sexual risk taking intentions), to some degree. The findings regarding the association between relationship motivation and sexual risk taking intentions were at times in the directions predicted and at times contradictory. For instance, as predicted, high relationship motivation was associated with a greater perception of future relationship potential with the hypothetical partner, if they agreed to unprotected sex. Perhaps, in accordance with the findings of Zawacki and colleagues (2009), participants with high relationship motivation perceived greater relationship potential if they were to go along with the wishes of a partner who was reluctant to engage in condom use. Having unprotected sex can be viewed as a signal of trust in a sexual partner (Corbett, Dickson-Gomez, Hilario, & Weeks, 2009; Hock-Long

et al., 2012), which may be particularly appealing to some individuals with high relationship motivation.

However, in contrast to the above item, high relationship motivation was also associated with an increased stated interest in condom use. This finding seems to disagree with the idea that an individual with high relationship motivation would be more willing to forgo condom use in the interest of demonstrating trust and seeking greater intimacy with a sexual partner. However, one possible explanation for this finding is that individuals with high relationship motivation are more eager to present themselves as attractive potential partners (Hammer et al., 1996), and part of this desire to appear appealing could involve projecting the image of an individual who generally exhibits safer sexual behaviour (i.e., condom use), cares about their partners' sexual safety, and thus is less likely to carry an STI.

In my exploration of the effect of relationship motivation on MSW, MSM, and women's willingness to engage in unprotected sex in the hypothetical scenario, I found that both MSW and MSM who scored lower on relationship motivation reported a significantly greater willingness to engage in unprotected sex with the hypothetical partner than MSW and MSM who scored higher in relationship motivation. In contrast, women showed a greater willingness to engage in unprotected sex if they scored high on relationship motivation and especially if they also judged the hypothetical partner to feel more familiar. This finding suggests that relationship motivation may have a different effect in men than in women, and that these effects may be more complex than anticipated.

It may be that the male sample who scored lower in relationship motivation showed an increased willingness to engage in unprotected sex in the hypothetical scenario because these respondents perceived themselves and the hypothetical partner as low risk. As Downing-Matibag and Geisinger (2009) and Comer and Nemeroff (2000) suggest, individuals tend to use irrelevant information to determine their own and potential partners' STI/HIV status. Thus, participants low in relationship motivation (particularly MSW and MSM) may have viewed their risk of STI transmission as low and were more interested in obtaining sexual pleasure than either protecting themselves (or their partner), or in appearing as an ideal 'safer' partner. This may be likely, as participants who were experiencing a strong Paratelic state were predictably (Skakoon-Sparling & Cramer, 2015) less likely to perceive unprotected sex with the hypothetical partner as risky. Similarly, participants experiencing a stronger Negativistic state also showed greater intentions to engage in unprotected sex in the hypothetical scenario, suggesting a greater interest in unprotected sex may have been related to a lower interest in conforming to social norms about protected sex. Further research is needed to more deeply explore the observed gender differences in the association between relationship motivation and sexual risk-taking behaviour, as well as how this might interact with familiarity for MSM and heterosexual men and women. This is particularly important since, in the female sub-sample, we saw that a hypothetical partner who seemed more familiar influenced how women high in relationship motivation perceived the costs and benefits of agreeing to unprotected sex in the hypothetical scenario and no similar effect was found in the male sub-samples. Study 2 was designed to provide a more in-depth examination of the associations between relationship motivation and partner familiarity in

heterosexual men and women's sexual risk-taking intentions, with consideration of sexual arousal as an additional, potentially influential factor.

STUDY 2 - METHOD

Participants.

One hundred and forty-seven participants were recruited for both the experimental and control conditions from the University of Guelph (86 women and 57 men), using an advertisement presented in classrooms and posted on the course website for a variety of first and second year courses. Participants were also recruited using the University of Guelph Psychology Participant pool and from one section of the Winter 2016 "Couple and Family Relationships" course (a first-year level course). Eligible participants were between 18 and 25 years of age, and indicated that they had engaged in consensual vaginal or anal sex at least once ever. Participants self-identified as being neither married nor living in a common-law relationship at the time of screening. Participants who were involved in monogamous, long-term romantic relationships (longer than 6 months) were not eligible to participate, because it may have been challenging for them to envision themselves in the study scenarios. Eligible participants also self-identified as either heterosexual or bisexual: during screening, participants indicated their gender and their sexual attraction target (women, men, both, neither). In return for their participation, students had the option to enter a draw to win a $50 Visa gift card. Additionally, participants recruited from the Psychology participant pool and from the Couple and Family Relationship course were offered bonus course credit as remuneration.

Due to the sensitive nature of this study, protecting the confidentiality of participants was a priority; all collected data were identified using only participant

numbers, which were not associated with student names or numbers at any point. Entry for the gift card draw was voluntary, and any identifying information collected was kept separate from participant responses to the study materials.

Recruited participants ranged in age between 18 and 24 years (M = 19 years) and the vast majority reported their race/ethnicity as white/Caucasian (84.2%). Approximately 97.4% of the sample indicated that they were either single or were involved in a new or casual romantic relationship; 27.4% of the sample indicated that they were not in a sexual relationship and nearly 50% indicated that they were having sex, but did not have an exclusive sex partner. Sixty-eight percent of the sample indicated that they had engaged in consensual penetrative sex within the 30 day prior to their participation in the study and 60% of the total sample indicated that they use condoms "most of the time" or "always" (60% indicated that they had used a condom the last time they had sex). Over 50% of the sample indicated that they viewed erotic material "sometimes" or "frequently" (7.4% indicated that they view erotic material "every day"). Approximately 53% of participants indicated that they had never been tested for STIs or HIV (of those who had been tested, 3.7% reported a past positive STI diagnosis and only one participant reported a positive HIV diagnosis). See summary table (Table 18) for more detail.

Table 18

Demographic Summary

Variable	Response	Female	Male
Ethnicity	White	107 / 84%	53 / 84%
	Aboriginal	1 / 1%	0
	Asian	11/ 9%	5 / 8%
	Black	2 / 2%	0
	Latin American	2 / 2%	2 / 3%
	Other	4 / 3%	3 / 5%
Relationship Status	Single	87 / 69%	49 / 78%
	New/Casual Relationship	36 / 28%	13 / 21%
	Relationship 1 yr. or more	4 / 3%	1 / 2%
Sexual Relationship Status	Not Having Sex	35 / 28%	17 / 27%
	Having Sex but No Exclusive Partner	59 / 47%	33 / 52%
	Exclusive Relationship with Outside Partners	1 / 1%	0
	Exclusive Relationship, No Outside Partners	32 / 25%	13 / 21%
Sex Within Last 30 Days	Yes	90 / 86%	40 / 64%
Condom Frequency in Past 3 mo	Sometimes or less frequently	47 / 37%	16 / 25%
	Often or more frequently	80 / 63%	45 / 72%
	Decline	0	2 / 3%
Frequency of Erotic Material	Never / Rarely	72 / 57%	5 / 8%
	Sometimes	39 / 31%	20 / 32%
	Frequently / Every Day	15 / 12%	37 / 59%
	Decline	1 / 1%	1 / 2%
STI Testing	Within Past 6 mo.	44 / 35%	9 / 14%
	Within Past Year	18 / 14%	6 / 10%
	Within Past 5 Years	7 / 6%	3 / 5%
	Never Yet Been Tested	58 / 46%	42 / 67%
	Decline	0	3 / 5%
Positive STI Test	Yes	7 / 6%	0
	Decline	2 / 2%	0
Positive HIV Test	Yes	1 / 1%	0
	Decline	2 / 2%	0

Materials.

Computer Hardware and Software

This study was administered via laptops running Windows 7 and 8. The computer program *MediaLab* was used to present all study material to participants including: all videos, all scenarios, and all questionnaires. A freely available online game *Adventures in Sex City* (Middlesex-London Health Unit, 2007) was accessed via MediaLab, using the computer's *Chrome* browser. This web-based game is a sexual health trivia game, where participants answer questions about sexual health (e.g., STI symptomology and transmissibility). This trivia game was used primarily as a cool-down task to help dissipate any feelings of sexual arousal that may have occurred in participants, because it acts as a five- to ten-minute educational distraction. This task was used successfully for Skakoon-Sparling et al. (2016) and Skakoon-Sparling & Cramer (2014, 2016). Participants in the current study anecdotally reported greatly enjoying and learning from playing this trivia game.

Video Clips

Eight video clips, each approximately two minutes in length, were utilized in this study. The video clips for the experimental condition were taken from a variety of award winning sexually explicit films such as the Candida Royalle film, *Under the Covers* (2007), and well as the Erika Lust films: *Life, Love, Lust* (2010) and *Five Hot Stories for Her* (2007). All of the video clips depicted graphic but non-violent and non-demeaning sexual acts, including oral sex and penetrative vaginal sex. Specifically, three of the video clips portrayed penetrative vaginal intercourse between male and female partners and one video clip portrayed a heterosexual couple engaging in fellatio and then cunnilingus. The four non-erotic control video clips were non-sexual and non-violent in nature, but depicted interactions between male and female characters from popular

television shows and movies (e.g., a clip from the Pixar film *WALL-E* was used; Morris & Stanton, 2008). Participants viewed either four sexual clips (experimental condition) or four non-sexual clips (control condition). Each set of video clips was presented in a randomized order.

Mood Assessment and Manipulation Check

Affective state was assessed using a scale adapted from Mayer and Gaschke (1988)'s Brief Mood Introspection Scale (see Appendix F). The original scale consisted of 16 items and showed good internal reliability (Cronbach's alpha = .76). The authors stated that expanding the response scale, as in the current study, would enhance reliability. In the current study, only 4 items from this scale were used: participants rated their subjective sexual arousal, happiness, sadness, and boredom on a Likert scale ranging from 1 (e.g., 'not at all sexually aroused') to 9 (e.g., 'the most sexually aroused you've ever been'). Rather than being combined as a general mood scale, the sexual arousal item alone was used as a manipulation check.

Risk-Taking Scenarios

Sixteen text vignettes were presented to participants in four sets of four. The presentation of these scenarios was pseudo-randomized using *MediaLab*. Three types of scenarios were utilized in this study: four scenarios described an encounter with a less familiar partner (e.g., "*On a whim, you decide to go on a blind date with Anna, who contacted you through a dating website..."*) and four scenarios described an encounter with a more familiar partner (e.g., "*You and Tomas have been dating for a few weeks and seem to be connecting really well...*"). In accordance with the findings of (Starzyk et al., 2006), familiarity was manipulated using four primary dimensions of acquaintanceship:

duration of acquaintanceship, frequency of interaction, physical intimacy, and social network familiarity. Additionally, eight distracter scenarios, describing a variety of moral/ethical dilemmas a typical undergraduate student may face (see Appendix G) were included. Each scenario was accompanied by three questions, aimed at assessing participants' decision-making and risk taking intentions.

These scenarios were pilot tested on a separate sample of 125 male and female undergraduate students from the University of Windsor. After reading each scenario, pilot test participants were asked to respond, on a 10-point scale, to a variety of items such as: *"How likely is it that you would have unprotected sex with this person?" "How familiar do you think this person would feel to you?" "How much would you trust this person?" "How likely would it be that you would catch a sexually transmitted disease from this person if you had sex without a condom tonight?"* An analysis of the pilot test results indicated that the hypothetical partners in the 'familiar partner' scenarios were rated as being significantly more familiar, more trustworthy, better known, and a lower risk for STI/HIV transmission than the hypothetical partners in the "unfamiliar partner" scenarios. Overall, the hypothetically familiar partners ($M = 6.84$, $SE = .11$) were perceived as being significantly more familiar than the hypothetically unfamiliar partners ($M = 2.84$, $SE = .12$); $t\,(123) = 26.43$, $p < .01$.

In the current study, after reading each brief sexual risk-taking vignette, participants were asked to respond to three questions: one question assessed the degree to which they were willing to engage in sexual risk-taking (e.g.: "I would agree to have sex without using a condom tonight."), one assessed the degree to which they were proactive about condom safety (e.g.: "I would suggest going to get condoms from a nearby

pharmacy."), and the final question assessed participant concern that insisting on condom use might interfere with the positive aspects of the encounter (e.g.: "how concerned are you that Sam might change her mind about having sex during the delay while you went to get condoms?"). Responses to these items were averaged together to form a score for Risk-Taking Intentions and Sexual Encounter Concern, respectively. Separate scores were computed for familiar versus unfamiliar partner scenarios.

Relationship Motivation

The same scale was used as in Study 1. In the current study the relationship motivation scale achieved a Cronbach's alpha of .87, indicating good reliability.

Procedure

Participants were invited to participate in a research project about gender differences in preference for video clips and student attitudes. Although this was a deception, I believed the use of mild deception was important for this study so as to reduce any expectancy effects potentially associated with the sexual arousal manipulation. Participants were, however, informed that they might be exposed to sexual material, to ensure that they were adequately informed about the material they could view as a result of participation. Because participants were meant to believe that they were taking part in a study about their film clip preferences, they were told that the presented scenarios were part of a different study, which had been combined with the video clip study for efficiency. Similar methodology has been used successfully in the past (e.g., Skakoon-Sparling & Cramer, 2014, 2016; Skakoon-Sparling et al., 2016).

An experimenter greeted participants, explained the experimental procedures, and reviewed the initial consent form. The experimenter also assisted participants as they completed a tutorial task on the computer, to ensure they understood the required tasks (i.e., advancing through the screens, pausing the video clips, and answering multiple choice and fill-in-the-blank questions). Participants engaged in either the experimental/sexual arousal condition (where they viewed the four sexually explicit videos) or they engaged in the control condition (where they viewed the four non-sexual videos). The study was divided into four blocks of activity. Each block consisted of the following activities: participants watched two minutes of video (either control or sexually explicit – depending on the condition assigned) after which, they completed the mood scale and then four pseudo-randomized scenarios: two random distracter scenarios with two random sexual scenarios in a randomized order. Each session was broken up into these four blocks in an effort to maintain a heightened state of sexual arousal in the experimental group through repeated exposure to the sexually explicit video material. This procedure was replicated for the control condition to maintain consistency in the experimental design. Thus participants proceeded through this section of the study as follows: participants viewed a video clip (non-sexual if assigned to control condition, sexual if assigned to experimental condition), completed the mini-mood scale, responded to 4 pseudo randomly ordered scenarios (1 familiar partner scenario, 1 unfamiliar partner scenario, and 2 distracter scenarios), then proceeded to block two where they would view a second video clip (non-sexual if assigned to control condition, sexual if assigned to experimental condition), complete the mini-mood scale, respond to 4 new scenarios (1 familiar partner scenario, 1 unfamiliar partner scenario, and 2 distracter scenarios), then

proceed to block three, etc.; until all four blocks were complete. After the completion of each block, participants viewed a screen inviting them to notify the experimenter if they did not feel comfortable continuing on with the study and informing them that there would be no penalty for discontinuing the study.

After the completion of all four blocks of activity, participants completed the Relationship Motivation Scale, followed by an additional manipulation check. Participants rated and ranked all four videos clips in a number of categories, including "Entertaining," "Boring," and "Sexually Arousing" (see Appendix H). This second manipulation check not only confirmed that participants in the experimental condition found their set of video clips sexually arousing, while those in the control condition did not, but also fit well with the cover story about the examination of gender differences in film clip preferences.

After completing the video clip rankings, participants provided demographic information (viz. age, relationship status, sexual behaviour, etc.; see Appendix I). Following the completion of this final survey, participants played the online educational trivia game on STIs and safer sex practices (*Adventures in Sex City;* Middlesex-London Health Unit, 2007) to provide a cooling down period before debriefing began. The purpose of the cooling period was to allow for any feelings of sexual arousal in the experimental condition to dissipate; this task also helped to educate all participants about safer sex practices, thus increasing the personal benefit of participating in this study. At study completion, the experimenter completed a thorough debriefing and obtained informed consent for data inclusion. Participation in this experiment lasted around 45 minutes.

STUDY 2 - RESULTS

Sexual Arousal Manipulation.

A 2 (gender: female vs. male) by 2 (condition: experimental vs. control) ANOVA revealed a main effect of condition such that participants in the experimental condition ($M = 4.83$, $SD = 1.73$) showed significantly higher subjective sexual arousal scores than participants in the control condition ($M = 1.80$, $SD = .89$): F (1, 139) = 172.69, $p < .001$. Due to concerns about the unequal variance in the data, a Mann-Whitney U test was conducted (comparing the experimental and control groups) and confirmed a significant difference: $U = 660.50$, $N_1 = 90$, $N_2 = 100$, $p < .001$). No main effect of gender ($p > .05$) or interaction effect ($p > .05$) was found: men ($M = 3.3$, $SD = 1.9$) did not differ significantly from women ($M = 3.3$, $SD = 2.1$).

The data from the other mood variables were also analyzed. A 2 (gender: female vs. male) by 2 (condition: experimental vs. control) ANOVA revealed a main effect of condition such that participants in the experimental condition ($M = 5.\ 3$, $SD = 1.5$) were significantly happier after viewing their video clips than participants in the control condition ($M = 4.8$, $SD = 1.4$): F (1, 186) = 5.30, $p < .05$. No main effect of gender ($p > .05$) or interaction effect ($p > .05$) was found; men ($M = 5.3$, $SD = 1.5$) did not differ significantly from women ($M = 4.9$, $SD = 1.5$) in happiness ratings.

A 2 (gender: female vs. male) by 2 (condition: experimental vs. control) ANOVA revealed no effect of condition ($p > .05$); participants in the experimental condition ($M = 2.6$, $SD = 1.6$) were not significantly sadder after viewing their video clips than participants in the control condition ($M = 2.4$, $SD = 1.3$). No main effect of gender ($p >$

.05) or interaction effect ($p > .05$) was found; men ($M = 2.5$, $SD = 1.5$) did not differ significantly from women ($M = 2.5$, $SD = 1.4$) in sadness ratings.

A 2 (gender: female vs. male) by 2 (condition: experimental vs. control) ANOVA revealed a significant main effect of condition such that participants in the experimental condition ($M = 4.0$, $SD = 1.8$) were significantly less bored viewing their video clips than participants in the control condition ($M = 4.7$, $SD = 1.8$): F (1, 186) = 7.7, $p < .01$. A significant main effect of gender was also found; men ($M = 4.8$, $SD = 1.8$) were significantly more bored than women ($M = 4.2$, $SD = 1.8$). No interaction effect ($p > .05$) was found.

Risk-Taking Intentions with More Familiar versus Less Familiar Partners.

A Relationship Motivation Score (RMS) was calculated by averaging together the responses to all 15 relationship motivation scale items. An independent samples *t*-test was conducted to determine if RMS varied based on gender, no significant effect of gender was found ($p > .05$). An additional independent samples *t*-test was conducted to determine if RMS varied based on condition, no significant difference in scores was found between the experimental condition and the control condition ($p > .05$).

In order to examine how participant responses to the vignettes differed based on RMS, this score was then dichotomized to divide respondents into two categories: scores higher than 5.00 were categorized as High Relationship Motivation ($n = 81$) and scores of 4.99 and lower were categorized as Low Relationship Motivation ($n = 31$). It was determined that no respondents' average score was exactly 5, though these would have been excluded, since this represents the exact midpoint of the scale.

A paired sample *t*-test was conducted to compare participants' sexual risk-taking intentions with more familiar versus less familiar hypothetical partner types. It was found that, overall, participants showed greater sexual risk-taking intentions with the more familiar partners ($M = 3.72$, $SD = 1.65$) than with the less familiar partners ($M = 2.92$, $SD = 1.48$): $t\ (142) = 10.95$, $p < .001$.

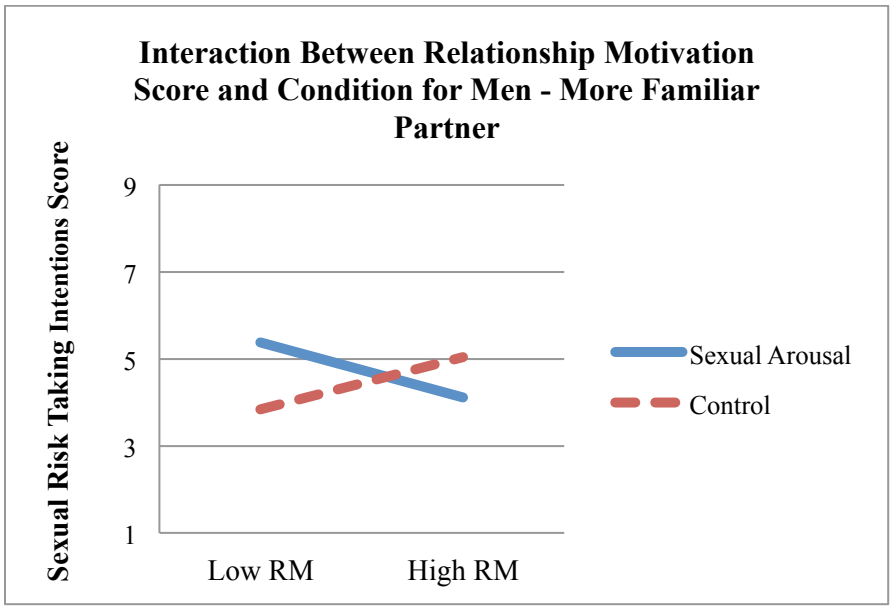
A three-way independent groups ANOVA, that is a 2 (gender: male vs. female) x 2 (condition: sexual arousal vs. control) x 2 (RMS: high vs. low) ANOVA was conducted for the familiar and unfamiliar risk-taking scores separately.

More Familiar Partner Scenarios – A significant main effect of gender was found for risk-taking in the familiar partner scenarios. Male participants ($M = 4.38$, $SD = 1.70$) showed significantly greater risk taking intentions with the familiar partners than female participants ($M = 3.29$, $SD = 1.48$): $F\ (1, 135) = 13.93$, $p < .01$. No other significant main effects were found ($ps > .05$). No significant two-way interactions were found ($ps > .05$). There was a significant three-way interaction: $F\ (1, 135) = 5.85$, $p < .05$.

In order to unpack this interaction, the effects of condition and RMS on risk-taking intentions in the familiar partner scenarios were analyzed for each gender separately. Among female participants, no significant main effects or interaction effects were found ($ps > .05$). However, among male participants, a significant interaction between RMS and condition was found: $F\ (1, 53) = 5.61$, $p < .05$. A graphical analysis (see Figure 1) suggests that male participants who scored low on relationship motivation showed increased sexual risk-taking intentions in the sexual arousal condition ($M = 5.38$, $SD = 1.01$) than in the control condition ($M = 3.84$, $SD = 1.69$); while those high in

relationship motivation showed lower sexual risk-taking intentions in the sexual arousal condition ($M = 4.01$, $SD = 1.71$) than in the control condition ($M = 5.04$, $SD = 1.60$).

Figure 1:



Unfamiliar Partner Scenarios – A significant main effect of gender was found for risk-taking in the unfamiliar partner scenarios. Male participants ($M = 3.67$, $SD = 1.48$) showed significantly greater risk taking intentions with the unfamiliar partners than female participants ($M = 2.43$, $SD = 1.26$): F (1, 135) = 22.75, $p < .01$. No other significant main effects were found ($ps > .05$). No significant two-way interactions were found ($ps > .05$). A marginally significant three-way interaction was found between RMS, gender, and condition: F (1, 135) = 3.85, $p = .052$. Because this interaction effect was only marginally significant, further analysis could not be justified.

The Impact of Relationship Motivation on Concern about Condom Insistence Interfering with Sexual Situation with Familiar versus Unfamiliar Partners.

A repeated measures *t*-test comparing responses to the more familiar versus the less familiar partner scenarios revealed no significant difference in participants' concern for condom negotiation interfering with the sexual encounter based on hypothetical partner familiarity ($p > .05$). Thus, these two items were combined into a single variable for concern about the impact of condom insistence. A 2 (gender: male vs. female) x 2 (condition: sexual arousal vs. control) x 2 (RMS: high vs. low) ANOVA was conducted. A significant main effect of gender was found; female participants ($M = 2.95$, $SD = 1.58$) showed significantly lower concern than male participants ($M = 3.53$, $SD = 1.42$): F (1, 135) = 4.07, $p < .05$. A significant main effect of RMS was also found for concern about a negative impact of condom negotiation in the familiar partner scenarios. Participants who scored high on relationship motivation ($M = 3.31$, $SD = 1.59$) showed significantly higher concern than participants who scored low on relationship motivation ($M = 2.73$, $SD = 1.25$): F (1, 135) = 4.28, $p < .05$. No other significant main effects or interactions were found (ps > .05).

STUDY 2 - DISCUSSION

In this study, participants viewed either sexually arousing or control video material before responding to a set of brief scenarios describing a sexual situation with either a more familiar or a less familiar hypothetical partner. The results of this study support Hypothesis 6 (that high relationship motivation would be associated with greater concern about potential negative impacts of condom negotiation), and offer some degree of support for Hypotheses 4 and 5 (that sexual arousal, relationship motivation, and partner familiarity would impact sexual risk-taking intentions).

Participants showed significantly greater sexual risk-taking intentions with more familiar hypothetical partners than with less familiar hypothetical partners. This pattern of response fits well with the current body of literature, which suggests that, not only can familiarity be established quite quickly (Skakoon-Sparling & Cramer, 2015; Swann et al., 1995), but also that a sense of familiarity can lead to a false sense of security and increased sexual risk-taking (Comer and Nemeroff, 2000; Downing-Matibag & Geisinger, 2009; Kelly and Kalichman, 1995; Skakoon-Sparling & Cramer, 2015; Suvivuo et al., 2009; Williams et al., 1992).

It was observed that familiarity with the hypothetical partners did not impact participants' concern that insisting on condom use would interfere with the sexual situation (e.g., disrupting the mood, causing a potential partner to change their mind about sex, etc.). However, relationship motivation was found to have an effect here. Participants with high relationship motivation showed significantly more concern that insisting on condom use would interfere with the sexual situation. This finding is plausible, given that an individual who is more interested in establishing and maintaining long-term relationships would also be concerned with impression management, (Adelman, 1991; Hammer et al., 1996; Metts & Fitzpatrick, 1992; Zawacki et al., 2009) and may be more concerned that insisting on condom use could pose a risk to the desired sense of intimacy (Choi, Rickman, & Catania, 1994; Edwards & Barber, 2010; Harper, Dickson, & Welsh, 2006; Widman, Welsh, McNulty, & Little, 2006).

The results of this study also showed a strong effect of gender. Male participants showed significantly greater sexual risk-taking intentions compared to female participants with both the familiar and unfamiliar hypothetical partners. This was not

unexpected, as similar results have been observed in the literature (e.g., Crosby et al., 2014b; Skakoon-Sparling et al., 2016; Wilson, Daly, Gordon, & Pratt, 1996). As discussed in Skakoon-Sparling et al. (2016), increased sexual risk-taking in heterosexual males may be due to their lower risk of contracting an STI or HIV from an unprotected sexual encounter with a female partner (Norris et al., 2004). Additionally, men typically experience fewer ramifications for their involvement in an unplanned pregnancy, compared to women. Thus, we may see greater risk-taking intentions in heterosexual men because they perceive fewer risks associated with unprotected sex compared to their female partners (Crosby et al., 2014b).

Although I did not find that condition or RMS had a strong influence on sexual risk-taking intentions, the results of this study did show an interesting interaction between gender, RMS, and condition with the more familiar hypothetical partners. Specifically, male participants with high relationship motivation in the sexual arousal condition showed significantly lower sexual risk-taking intentions than high relationship motivation men in the control condition. In contrast, male participants with low relationship motivation showed the inverse pattern of responses. At first glance these findings may seem somewhat counter-intuitive (particularly given the results of previous sexual arousal studies like: Areily & Loewenstein, 2006; Shuper & Fisher, 2008; and Skakoon-Sparling et al., 2016). However, if we consider the postulation that sexual myopia may function much like alcohol myopia (Steele & Josephs, 1990) and combine this concept with the postulation of Zawacki et al. (2009) – that intoxicated individuals who are highly motivated by relationship goals are more sensitive to situational cues (like partner familiarity) – the findings of the current study are less surprising. Zawacki et al. (2009)

found that among their participants who had received higher doses of alcohol, those who also scored high on their measure of relationship motivation became more sensitive to salient cues that may have suggested lower relationship potential and thus reported lower sexual risk-taking intentions (since there should be no motivation to engage in sexual risk-taking if it would not meet goals for relationship establishment/ maintenance).

A similar effect may have occurred in the current study: male participants who scored higher on relationship motivation and were also experiencing the effects of sexual myopia focused upon features in the scenarios. Perhaps they saw little or no relationship potential with the hypothetical partners or were influenced by the lack of information about sexual health history, which decreased their intentions to engage in risky sexual behaviour. Another plausible explanation is that men's higher relationship motivation, combined with the myopic effects of sexual arousal, increased their drive to engage in impression management in order to appear to be a safer and more desirable partner.

In a similar vein, it is also reasonable to postulate that male participants who were low in relationship motivation were blind to the situational cues that influenced those high in relationship motivation. Thus, low relationship motivated men were simply affected by the instigatory effects of sexual arousal (as seen in Skakoon-Sparling et al., 2016) and showed increased sexual risk taking intentions in the experimental condition compared to the control condition.

This finding in Study 2 also gives important insight into the findings from Study 1, which showed increased sexual risk-taking intentions among male participants with low, but not with high relationship motivation. It seems that sexual arousal is an

important contextual factor that impacts the association between relationship motivation and sexual risk-taking intentions in men.

GRAND DISCUSSION

The current studies examined the impact of four factors hypothesized to be related to sexual decision-making and the negotiation of condom use: meta-motivational state, sexual arousal, relationship motivation, and partner familiarity. Study 1 explored gender and sexual orientation differences in condom negotiation strategies in MSM, MSW, and heterosexual women, using an online vignette that presented participants with a hypothetical sexual/romantic encounter involving a new sexual partner. Study 1 also examined the relevance of factors such as meta-motivational state and relationship motivation to sexual decision-making in the condom negotiation process. In Study 2, participants viewed either sexually arousing or sexually neutral (control) video clips, and responded to a series of short scenarios depicting sexual encounter situations with more and less familiar hypothetical partners. The goal of Study 2 was to explore the associations of sexual arousal, relationship motivation, and partner familiarity with one another and with sexual risk-taking intentions. The results of these two studies provide important information about how sexual decision-making and the process of negotiating condom use can be impacted and pushed into the danger zone, where sexual risk taking is more likely to occur, by meta-motivational state, sexual arousal, partner familiarity, and relationship motivation.

Meta-Motivational States

The results of Study 1 extend our understanding of the associations between sexual risk-taking behaviour and the *Rules* and *Means-end* Domains. The *Rules* Domain (characterized by the conformist and rebellious/ negativistic states) was found to predict a number of outcomes related to condom negotiation and risky sexual behaviour. For instance, a stronger conformist state predicted stronger sexual assertiveness, increased stated interest in condom use, decreased willingness to engage in unprotected sex with the hypothetical partner, and greater endorsement of risk reduction strategies. Since the conformist state is associated with rule following, this finding demonstrates that individuals who are either more conformist by trait or experiencing a stronger conformist state are more likely to adhere to established social norms (in this case, norms commonly endorsed in the United States and Canada) about the importance of using condoms. These findings add support to the notion that the conformist state is generally associated with decreased sexual risk-taking. However, it should be noted that by insisting on condom use (as can be interpreted by the association with decreased willingness to engage in unprotected sex), such respondents are, in a way, rebelling against the wishes of the hypothetical partner. This suggests that when we see the conformist state is associated with conforming to social norms, this may not be the social norms of the immediate situation, but instead the broader societal norms established in an individual's wider community, perhaps through (sexual) education and peer influence. More work is needed in order to determine the potential influence of peer norms versus broader social norms versus the situational tone on the attitudes and behaviours of individuals experiencing a stronger conformist or negativistic state.

Similarly, the *Means-end* Domain (characterized by the telic and paratelic states) was also found to predict a number of outcomes related to condom negotiation and sexual risk-taking. For instance, a stronger telic state predicted a greater sense that having unprotected sex would be risky and a greater sense that the hypothetical scenario partner would be interested in condom use. Since the telic state is associated with long-term, goal directed behaviour, this finding demonstrates that individuals who are either more telic by trait or who are experiencing a stronger telic state not only endorse attitudes that are in line with a goal to avoid sexual risk taking, but assume that their partner endorses such an attitude as well. This finding lends support to the notion that the telic state is associated with decreased sexual risk-taking. It should be noted that, similar to an overabundance of sexual self-restraint (as discussed in Skakoon-Sparling & Cramer, 2016), a strong telic state could interfere with one's sexual functioning, resulting in increased anxiety and sexual dysfunction. More work is needed to explore how individuals may be able to balance the benefits of each state. For example, engaging the telic state (i.e., by preparing for potential sexual activity by purchasing condoms and talking about sexual history with a sex partner), may help establish a good protective frame, which would allow for a safe transition into the more enjoyment focussed paratelic state during the actual sexual encounter.

Syndemic Risk Factors

The results of Study 1 also increased our understanding of the associations of risk factors, like NCSE, intimate partner violence, and poly drug use. Poly drug users were less likely to perceive risk associated with unprotected sex in the hypothetical scenario. This helps to explain the trend seen in the literature, showing increased sexual risk taking

among poly drug users (e.g., Hutton et al., 2013; Li et al., 2012; Tobin et al., 2016), since it seems logical that these individuals would be more likely to engage in a behaviour that they do not perceive to be risky. It was also found that individuals who had experienced intimate partner violence (specifically sexual battery) perceived the hypothetical partner as being less interested in condom use and perceived less potential for a future relationship if they refused to have unprotected sex. This finding seems to fit with association between intimate partner violence and unprotected sex (e.g., Finneran & Stephenson, 2014), since participants with such a history may have a more negative outlook on the outcome of going against a partner's wishes (e.g., the hypothetical partner's desire for unprotected sex).

Sexual Arousal

Although sexual arousal was not one of the primary factors explored in Study 1, an effect of sexual arousal on sexual risk-taking intentions was indeed observed. Participants who rated the sexual/romantic encounter vignette as being more sexually arousing also perceived greater relationship potential with the hypothetical partner (regardless of whether or not they agreed to have unprotected sex) and they were more willing to engage in hypothetical unprotected sex. Similarly, in Study 2, low RMS participants in the sexual arousal condition showed increased risk-taking intentions in response to the hypothetical scenarios. These findings add to the current body of literature (e.g., Areily & Loewenstein, 2006; Shuper & Fisher, 2008; Skakoon-Sparling et al., 2016), demonstrating that sexual arousal is associated with increased sexual risk-taking, but under certain conditions (e.g., in combination with considerations of relationship motivation). The current results also extend the research on this topic to

demonstrate that sexual arousal is also associated with altered perceptions of relationship potential. The association between sexual arousal and greater perceived relationship potential in Study 1 suggests that some sexually aroused individuals have a more optimistic view of their relationship prospects thus may be more willing to engage in risky sexual behaviour because they view this action as being more conducive to facilitating the establishment of a romantic relationship. This fits well with the findings of Skakoon-Sparling and Cramer (2015), which showed an association between increased sexual arousal and a shift to the Paratelic meta-motivational state, a state linked with pleasure and enjoyment. It seems that when an individual (especially a man) with lower relationship motivation is sexually aroused, they become more focused on wanting to enjoy a pleasurable experience with their sexual partner and are thus more willing to engage in sexual risk-taking behaviour.

Relationship Motivation and Partner Familiarity

Although the decision of whether or not to use or request the use of a condom is largely an individual's own decision (a decision which, as discussed above, can be impacted by internal factors such as meta-motivational state and sexual arousal), this choice is also influenced by one's perceptions of a potential sexual partner, as well as by concerns about how this potential partner will interpret and respond to such a request (Umphrey & Sherblom, 2007). The results of the current studies support this notion and suggest that the familiarity of a partner, as well as individuals' motivation to establish and maintain long-term romantic relationships indeed impact their sexual risk-taking intentions. In Study 1, participants high in relationship motivation reported feeling that unprotected sex in the hypothetical scenario would be quite risky and reported a strong

desire to use condoms. However, these participants also reported that they would be more likely to continue a relationship with the hypothetical partner if they agreed to unprotected sex. This seemingly conflicting response pattern suggests that while participants who are strongly motivated by relationship goals are sensitive to risk cues and may wish to present themselves as "safe", condom-using sexual partners (and thus more desirable romantic partners), they still seem to sense that acquiescing to a partner's sexual interests could facilitate the sexual and relationship satisfaction necessary to build the foundation of a future relationship (Impett, Stachman, Finkel, & Gable, 2008; Muise, Boudreau, & Rosen, 2016; Muise, Impett, & Desmarais, 2013). It may also be that participants' perceptions of any risk cues in the scenario (e.g., the lack of information about the partner's sexual history) or the value they assigned to these cues changed in the time that passed (via the progression of the vignette) between the initial probe that gauged their risk perceptions and the item that probed their perceived potential relationship outcome as a result of engaging in sexual risk-taking. Regardless, the results of Study 1 dovetail to some degree with the results of Study 2, which showed that participants with higher relationship motivation also demonstrated more concern for the potential negative impact of condom insistence on the mood of the encounter and on the potential for meeting sexual and relationship goals. Umphrey and Sherblom (2007) point out that, for individuals who possess strong relationship goals, if a request to use a condom is considered a possible threat to this goal, these individuals will likely consider such a request very carefully. This is precisely what the results of the current studies seem to demonstrate.

Indeed, Righetti, Finkenauer, and Finkel (2013) found that individuals who are strongly motivated to maintain close relationships will also rely on automatic processes (like heuristics) that facilitate decision making in favour of relationship formation or maintenance. These authors also found that such decision-making can potentially result in sacrifices of personal well-being when individuals are under conditions that tax their self-control. This links well with the association demonstrated between increased sexual arousal and decreased self-control in my own past work (Skakoon-Sparling & Cramer, 2016). Thus, some individuals who are higher in relationship motivation and also experiencing a drain on their self-control (via sexual arousal) may choose to engage in impression management behaviours (which could include engaging in risky sexual behaviours) in the service of building intimacy and strengthening a potential romantic relationship with a desirable or trusted sexual partner (which was seen in the female participants in Study 1).

It may be that individuals who are high in relationship motivation are also generally more motivated to engage in impression management (Tracy, 1990) in order to achieve their goal of establishing a long-term relationship (Goffman, 1959). Some individuals (e.g., the male sample in the current studies) could find it advantageous to attempt to mould others' impressions and associate themselves with a potentially desirable identity (e.g., a safe, condom using sex partner). The desirability of such an identity would largely depend on how an individual perceives condom insistence and, in particular, how they believe a potential new relationship partner would perceive condom use. This may partially explain the gender differences seen, particularly in Study 1, since heterosexual men and women had very different perceptions of their partners' interest in

condom use. Although MSM and MSW may have believed that a partner would view their desire for condom use as normative and/or virtuous, women may have believed their partners would view condom use as indicative of suspect moral character or mistrust.

Interestingly, in Study 1, despite responding to earlier items in a manner that might cultivate a favourable impression, high RMS participants were still willing to engage in sexual risk-taking later in the scenario, presumably to facilitate relationship goals. Thus, it seems that individuals with higher relationship motivation, though they may have no difficulty sensing (and may even be more sensitive to) risk cues, find that their desire to please their partner can sometimes override their desire to avoid sexual risk taking. In fact, this is demonstrated well in the findings of Study 1. Here we saw a greater willingness to engage in unprotected sex with the hypothetical partner in the women with high relationship motivation. Particularly in the subgroup of women who also identified the hypothetical partner as seeming more familiar (and thus, presumably a more appealing partner, based on Williams et al., 1992).

These findings suggest that, although relationship motivation indeed has an impact on sexual risk-taking intentions, this effect depends on one's perception of the partner in particular – if they are judged to be a desirable (i.e., familiar and safer) sexual and romantic partner, it is easier to justify engaging in objectively riskier sexual behaviour. The findings of Sakaluk and Gillath (2016) support this notion as well; here the authors found that participants who felt secure with their partner viewed this individual as posing less of a sexual health threat and were less likely to engage in condom acquisition behaviours.

The decisions that individuals make are driven by their feelings (Charpentier, De Neve, Li, Roiser, & Sharot, 2016). Decision making does not occur based on a cold internal statistical analysis of risk and probability – there is no simple logic mechanism in the human mind, as the dual processing model described by Toates (2009) illustrates. In Toates's model, it is all too easy for the impulsive unconscious processing system to override the more computative/rational processing system. Even under optimal conditions, these two systems must function in parallel.

As such, individuals who are more risk sensitive – who perceive more risk in a given situation – tend to behave in a more risk avoidant fashion (regardless of what might be rational). When losses and gains are evaluated simultaneously, emotional feelings about losses tend to be weighed more strongly than feelings about gains (Charpentier et al., 2016). In line with this supposition, Study 2 showed that sexually aroused men who are highly motivated by relationship goals may become more attuned to overarching risk cues present in a scenario (e.g., the lack of information about sexual health history, the casual nature of the encounters described, etc.), which represent a possibility for loss (i.e., a loss of good health, of status, etc.), and thus were less likely to engage in sexual risk-taking[5]. But the results of Study 2 also suggest that individuals who are strongly motivated to establish and maintain longer-term romantic relationships are still more attuned to their feelings about the risk of losing out on a potential mate rather than the hypothetical risk of potentially contracting an STI (a different kind of, and potentially

[5] Consider also that the high relationship motivated men may instead have been more motivated to engage in impression management in order to appear more desirable themselves – and thus responded to items in a more socially desirable fashion. In this way they may, instead, have been responding to minimize the risk of losing opportunities to attract relationship partners.

less salient, loss; Toates, 2009). This effect likely drives the responses to the items related to concern about the negative impact of insisting on condom use on the relationship and the sexual mood of the encounter. Here participants who were highly motivated by relationship goals were more concerned that insisting on condom use would interfere with goals related to building a sense of intimacy with a sexual partner.

Galligan and Terry (1993) contend that when individuals who value the romantic ideal of sex are highly concerned about ruining the romance of a sexual encounter, they are less likely to introduce (or insist on) condom use, a notion which is supported by the findings of the current studies as well as by Afifi (1999). Afifi found that higher attachment to a partner, as well as the perception that condoms carry negative relational and identity connotations, predicted lower condom use. Afifi also notes that, since most individuals have already developed a favourable opinion of their soon-to-be sexual partner (whether this is based on inconsequential information (Williams et al., 1992) or is the result of cognitive dissonance reduction (Gold, Karmiloff-Smith, Skinner, & Morton, 1992)) by the time they are ready to engage in sexual activity, this decision will seem (to them) perfectly rational and not especially risky. This highlights the particular quality of factors like meta-motivational state, sexual arousal, relationship motivation, and partner familiarity, because each factor contributes uniquely to mask or alter perceptions of the risk cues that should be apparent during a sexual encounter with a new sexual partner, resulting in an unintentional sexual risk-taking danger zone.

Limitations

The current studies are not without limitations. Neither study included samples of women who have sex with women or individuals who identify as trans (or other

gender/sexuality minority groups). This was the result of a purposeful methodological decision, in order to focus on sexual safety behaviours and condom negotiation under conditions where it would be most certain that at least one partner should/could be using a condom on a functional penis during penetrative sexual activity. However, this exclusion does limit the generalizability of the current findings. Additionally, Study 2 relied upon a convenience sample of heterosexual male and female undergraduate students. Thus it cannot be determined how the findings of Study 2 may generalize to non-university and non-heterosexual populations. A further limitation in Study 2 is that the sexual encounter scenarios all contained questions related to condom use. This may have primed participants to respond in a more socially desirable fashion, regardless of experimental condition, which may have obscured the results of this study to an unknown degree. Both studies also relied upon hypothetical scenarios to gauge participant responses and sexual risk-taking intentions. It has been noted that one of the limitations of using vignettes is that they cannot fully capture all of the elements contained in a real situation (Hughs & Huby, 2004) and thus may not invoke the same degree of emotional response in participants (Collett & Childs, 2011). However, the factors examined in the current studies would be methodologically and ethically challenging to investigate using more realistic methods. Additionally, the use of hypothetical scenarios has provided what is arguably a useful perspective of participants' intentions regarding sexual risk-taking and condom negotiation, which is predictive of actual behaviour (e.g., Sheeran, Abraham, & Orbell, 1999; Sheeran & Orbell, 1998; Turchik & Gidycz, 2012). Notwithstanding these limitations, the results of the current project provides important

evidence about factors related to sexual risk-taking. For instance, it is the first to identify a link between perceptions about sexual partners and relationship goals in men.

Future Directions

Based on the results of the current studies, it is clear that much more work is needed in the future to explore the associations of meta-motivational state, sexual arousal, partner familiarity, and relationship motivation with sexual risk-taking behaviour. In particular, a replication of these studies using community samples (particularly recruited from communities at elevated risk for HIV transmission) and including more members of sexual minority groups would provide more generalizable and important information about how different populations may be influenced by factors like relationship motivation and sexual arousal when choosing whether or not to engage in risky sexual activities with more and less familiar sexual partners. Additionally, cross-cultural replications are needed to determine whether the trends seen in the current studies occur in non Canadian/American populations. Finally, further work is needed to explore and better understand the gender differences seen in the current studies on the impact of relationship motivation on sexual risk-taking and how this may interact with sexual arousal.

Implications/Conclusion

The results of my doctoral dissertation research indicate that individuals' sexual health decision making is impacted by a variety of factors that were previously either unexplored or under examined. Overall, a stronger orientation toward forming long-term relationships and a more rebellious and/or pleasure oriented motivational state all encourage increased sexual risk taking behaviour, particularly with a partner who is judged to be more familiar. These findings suggest that, under such conditions, men and

women may both have difficulty recognising the importance of effectively protecting themselves from STI transmission. This is particularly concerning since it has been established, in the literature and in the current studies, that a sense of familiarity can be developed very quickly. It is clear that educating young adults to abide by new sexual decision-making heuristics may be critically important, since we cannot hope to make good decisions without first gathering more relevant information. Establishing social scripts that encourage more open communication about sexual history and increase the perception of condom use as normative would be very beneficial. Additionally, instilling a heuristic to always use condoms until both partners have been tested for STIs/HIV and have formed a monogamous agreement (or an agreement to use condoms consistently with outside partners) would help curb the spread of STIs and HIV. Further, the gender difference seen in the effect of relationship motivation on sexual risk-taking behaviour suggests that more education is needed to shift young adults' perceptions of condom use. While it is beneficial that men who are highly motivated by relationship goals are more inclined to show that they care about a sexual partner's health by using condoms, it is still problematic that the same behaviour was not seen in women or in men who scored low in relationship motivation. Future sexual education efforts may be more effective if they emphasize the importance of not only protecting oneself, but also seek to establish a sense of sexual communality among heterosexual men and women, as well as among MSM. It is important to encourage sexually active adults to recognise that preventing STIs/HIV is a shared responsibility (as in Davis; 2008 and Rangel & Adam, 2014), and not something that should be sacrificed for short-term enjoyment during a casual encounter or to facilitate intimacy in a new relationship.

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APPENDICES

Appendix A

You are about to read a story about a typical night out for a young adult. Try to picture or project yourself into this scenario. You may want to make sure that you are in a quiet location where you will not be disturbed or distracted. During the story, you are also going to be asked questions about how you might behave or react in the situation described, please answer these questions to the best of your ability, as if you were participating in the scenario yourself.

You see yourself as pretty typical for someone your age; you have days where you're really busy with work and projects, but you still manage find time to enjoy yourself with your friends. A few of your friends have invited you to come to a big party this weekend and you decide to go along. It will be good to have a night out, forget about your stresses, and have some fun. For once you don't have any urgent deadlines and this will be a great opportunity to meet some new people and hang out with friends.

You and your friends meet to get ready to go to the party together. Your favourite song is pumping you and you are already having a blast. Once you and your friends are ready, you make your way to the party. You fix yourself a drink, and start to mingle at the party; chatting with people you recognize and grooving to the music.

Heterosexual or Bisexual Female Participant Variant:

One of your friends, Sasha, remarks that there are a few really cute single guys that she knows at this party – she gives you a meaningful wink and a nudge. You've been single for quite a few months, so it's no surprise that she's trying to play matchmaker for you.

[Unfamiliar Partner Scenario variation

You give Sasha a non-committal response, but she seems sure that there is one guy in particular that you would hit it off with; her boyfriend's new roommate. He only moved in this week, but Sasha has already confirmed that he's single. She points him out to you across the room and you can agree that he is really attractive.

As you are dancing to the music with your other girl friends, Sasha slips away and returns with the new guy in tow. He is very cute, and grins bashfully at you. The two of you dance together for a couple of songs, but when the playlist switches to something you're not a fan of, the two of you head to the kitchen to refresh your drinks.

You find out that his name is Chris and you two seem to just click. Not only is he cute, but he's also easy to talk to and the conversation keeps flowing. **]**

[Familiar Partner Scenario variation

You give Sasha a non-committal response, but she seems sure that there is one guy in particular that you would hit it off with; her boyfriend's long-time roommate, Chris. She points him out to you across the room and you can agree that he is really cute. You've met Chris a few times already; it turns out that you both went to the same high school, but you two didn't really connect back then for some reason. Sasha definitely knows that you wouldn't mind getting to know Chris a little better.

As you are dancing to the music with your other girl friends, Sasha slips away and returns with Chris in tow. He is looking very cute, and grins bashfully at you. The two of you dance together for a couple of songs, but when the playlist switches to something you're not a fan of, the two of you head to the kitchen together to refresh your drinks.

You and Chris really seem to be clicking tonight. Not only is he cute, but he's also very easy to talk to and the conversation keeps flowing. **]**

As the party goes on, you two continue to hang out together. You dance some more with Chris, taking breaks to chat when it feels natural. Your friends don't seem to mind that you've all but ditched them, they are doing their own thing - everyone seems to be having a great time at this party. You and Chris are having a really good time with each other; you can already tell he's as into you as you are into him, just from how he's dancing with you and how he stares into your eyes when you're talking to him.

As the evening wears on, people start to trickle out of the party, some heading downtown to hit up the bars and clubs before last call, some heading out to grab pizza, and some heading home to bed. You and Chris decide to leave the party together and go for a walk.

You might not always move very fast with guys, but you feel a strong attraction to Chris, so when he leans over to kiss you, you aren't shy about kissing him back. The two of you kiss passionately for a few moments. He holds you in his arms and starts kissing and gently nibbling at your neck and ear, sending tingles through your whole body. He asks you if you want to go back to his place. Without hesitation, you agree to go back with him. The two of you turn down his street and head to his apartment.

The second you walk in the door, you can't keep your hands off each other. You're already pressing against each other and undoing buttons, still kissing each other hard as you make your way to his bedroom. You find yourself feeling very connected to Chris. He seems to know exactly where to touch and kiss you to drive you wild with passion - and he's definitely responding to you too.

The two of you keep taking things further and further, and it just feels so right. Before long, the two of you are down to your last scraps of clothing: you in your bra and panties and he in his boxers. From the way you two are kissing and touching each other, it is clear that you are both interested in having sex tonight. You can tell he's just as sexually excited as you are.

You'd really like Chris to start touching your vulva…

Q1 (SA) – How likely are you to ask Chris to touch you where you want him to touch you? (Scale 1 extremely unlikely – 10 extremely likely)

Q2 (SA -R) – How likely are you to wait for Chris to touch you where you want, without saying anything? (Scale 1 extremely unlikely – 10 extremely likely)

If rating for Q1 is 6 – 10:

You decide to whisper what you'd like Chris to do and he's delighted to oblige. He slides his hands down your body and begins to rub and massage your vulva.

If rating for Q1 is 1-5:

Luckily, it's as if Chris can read you mind; he slides his hands down your body and begins to rub and massage your vulva.

It's becoming very clear that you and Chris are going to have sex tonight. You know you're on the pill, but neither of you have really discussed safe sex yet.

Q3 – How much would you want to use a condom with Chris tonight? (Scale 1 not at all – 10 very much)

Q4 – How much do you think Chris wants to use a condom when you two have sex tonight? (Scale 1 not at all – 10 very much)

Q5 – How likely are you to bring up using a condom with Chris tonight? (Scale 1 extremely unlikely – 10 extremely likely)

Q6 – If you were going to bring up using condoms, which method would you most likely use with Chris tonight?

a) None, I would be comfortable having unprotected sex with Chris tonight
b) I would make it clear to him that we're not having sex unless we use a condom tonight
c) I would just tell him that I'd like to use condoms tonight
d) I would just keep fooling around and then just put a condom on him when it was time.
e) I would tell Chris that it would mean a lot to me and show me how much he cares, if he were to use a condom tonight.
f) I would tell Chris that using a condom will help protect us from any sexually transmitted diseases.
g) I would pretend that I'm worried about getting pregnant, even though I'm actually worried about STIs.

You decide to let Chris know that you want to use a condom if you're going to have sex with him tonight. He seems disappointed and reluctant, saying that he isn't even sure that he has any condoms.

Q7 – How risky do you think it would be to have sex without a condom with Chris tonight? (Scale 1 not at all risky – 10 extremely risky)

Q8 – How likely do you think it would be that you and Chris would continue dating after tonight if you refuse to have sex without a condom tonight? (Scale 1 extremely unlikely – 10 extremely likely)

Q9 – How likely do you think it would be that you and Chris would continue dating after tonight if you do decide to have sex without a condom tonight? (Scale 1 extremely unlikely – 10 extremely likely)

Chris urges you to have sex without a condom and he continues to kiss and touch you in just the way you've been enjoying. He tells you how intimate it will feel having sex tonight without anything separating you.

Q10 – How likely are you to go along with Chris and have sex without using a condom tonight? (Scale 1 extremely unlikely – 10 extremely likely)

Q11 – How likely are you to actually leave without having sex with Chris at all tonight if he won't use a condom? (Scale 1 extremely unlikely – 10 extremely likely)

Q12 – What strategy might you use to try to convince Chris that he should use a condom?

a) None, I would be comfortable having unprotected sex with Chris tonight
b) I would let Chris know that no condom = no sex with me tonight
c) I would say that since we're going to have sex, I'd like to use a condom
d) I would get him really sexually excited and then just bring out a condom

e) I would tell Chris using a condom tonight would really show me how much he cares about me.
f) I would tell Chris that there are so many sexual diseases out there that we should really use a condom.
g) I would tell Chris that I always have sex with condoms (even though sometimes I don't)
h) Other: _____

After a few moments you decide to speak up again. You let Chris know how important safe sex is to you and insist that the two of you must use a condom tonight. He gives in and is able to obtain a condom from his roommate.

The two of you have spectacular sex that night, and as you get into a cab to spend the rest of the night in your own bed, the two of you make plans to meet for coffee the next evening.

Follow up items:

How likely would you have been to use one of these other methods to limit your risk of exposure to STIs/HIV?

1. *Suggesting that I will be the top (I will put my penis in his butt, but not let him put his penis in me):* (Scale 1 extremely unlikely – 10 extremely likely) *shown for androphilic men only.
2. *Suggesting a lower risk sexual activity (e.g.: manual stimulation, mutual masturbation, oral sex):* (Scale 1 extremely unlikely – 10 extremely likely)
3. *Using PEP or PrEP to prevent HIV transmission:* (Scale 1 extremely unlikely – 10 extremely likely; I don't know what PEP or PrEP are)

Please rate how well you felt you were able to project yourself into this scenario:

1 (I could not project myself in this scenario at all) – 10 (I could very easily project myself into the scenario)

Please rate how sexually arousing you found this scenario to be:

1 (I was not at all sexually aroused) – 10 (I was the most sexually aroused I can be)

Please rate how realistic you found this scenario to be:

1 (not at all realistic) – 10 (extremely realistic)

If rating is 5 or lower – Why did you find the scenario to be particularly unrealistic?

_____

Appendix B

Telic/Paratelic State Inventory –Modified (T/PSI-M)

Instructions: *Below, you will find pairs of phrases that represent opposite sentiments. For each item, a rating of 1 indicates that you strongly agree with the sentiment on the left, whereas a rating of 9 indicates that you strongly agree with the sentiment on the right.*
Please click the number that indicates how you were feeling in the LAST FEW MINUTES.

1 Feeling playful	1 2 3 4 5 6 7 8 9	Feeling serious-minded
R 2 Wanting peace and quiet	1 2 3 4 5 6 7 8 9	Wanting adventure
R 3 Trying to accomplish something	1 2 3 4 5 6 7 8 9	Just having fun
4 Doing an activity just for the fun of it	1 2 3 4 5 6 7 8 9	Doing an activity because it may affect the future
5 Wanting to feel excitement	1 2 3 4 5 6 7 8 9	Wanting to feel calm
R 6 Wanting to be serious	1 2 3 4 5 6 7 8 9	Wanting to be playful
R 7 Concerned about the future effects of my current activity	1 2 3 4 5 6 7 8 9	Not concerned about the future effects of my current activity
8 Wanting to just have fun	1 2 3 4 5 6 7 8 9	Wanting to accomplish something
R 9 Wanting to feel less energetic	1 2 3 4 5 6 7 8 9	Wanting to feel more energetic
10 Living for the moment	1 2 3 4 5 6 7 8 9	Focusing on the future
R 11 Feeling serious	1 2 3 4 5 6 7 8 9	Feeling playful
12 Feeling adventurous	1 2 3 4 5 6 7 8 9	Not feeling adventurous

Conformity-Negativism Scale – State Measure

Below, you will find pairs of phrases that represent opposite sentiments. For each item, a rating of 1 indicates that you strongly agree with the sentiment on the left, whereas a rating of 9 indicates that you strongly agree with the sentiment on the right.

Please click the number that indicates how you were feeling in the LAST FEW MINUTES.

1. Following the Rules	1 2 3 4 5 6 7 8 9	Making my own Rules
2. Doing what is Expected of Me	1 2 3 4 5 6 7 8 9	Doing whatever I Want
3. Getting my Work Done	1 2 3 4 5 6 7 8 9	Putting off my Work to have Fun
R 4. Breaking the Rules	1 2 3 4 5 6 7 8 9	Doing What I am Supposed to Do
R 5. Doing my Own Thing	1 2 3 4 5 6 7 8 9	Following the Crowd
6. Going along with my Friends' Ideas	1 2 3 4 5 6 7 8 9	Making my Own Plan
7. Being on time	1 2 3 4 5 6 7 8 9	Arriving When it Suits me
8. Doing what it Takes to Get Along with Others	1 2 3 4 5 6 7 8 9	Serving my own Interests
R 9. Procrastinating	1 2 3 4 5 6 7 8 9	Finishing Tasks
10. Doing what I'm Asked to do	1 2 3 4 5 6 7 8 9	Doing What I Feel like Doing

Appendix C

Relationship Motivation Scale for Studies 1 and 2.

Scale:
1 – disagree strongly, 2, 3 – disagree somewhat, 4 – neutral, 5 – agree somewhat, 6, 7 – agree strongly

"Please rate how strongly to agree or disagree with the following statements:"

1. I like dating someone who feels like they are on the same wavelength as me
2. In dating relationships I like to share my most intimate thoughts and feelings
3. I like to date someone who makes me feel at ease when I'm with him/her
4. I can't see the point of dating someone
5. I prefer to date people with whom I might fall in love
6. It makes me happy to be committed to someone
7. I wouldn't get anything out of a romantic relationship
8. I like to consider my girl/boyfriend(s) my best friend(s)
9. In dating relationships I like to spend a substantial amount of time with my girl/boyfriend(s)
10. I prefer to consistently date someone
11. I think that looking for a partner would be a waste of time
12. In dating relationships I like to focus on possible future plans with my boy/girlfriend(s)
13. I only date those whom I can count on
14. Dating gives me someone to share cool activities with
15. It's expected that I have a boy/girlfriend

Appendix D

The Center for Epidemiologic Studies Depression Scale (CES-D Scale) – 10 item version

Below is a list of the ways you might have felt of behaved. Please indicate how often you have felt in this way during the past week: Rarely or none of the time (less than 1 day), Some or a little of the time (1 -2 days), Occasionally or a moderate amount of time (3-4 days), Most or ALL of the time (5-7 days)

1. I felt depressed
2. I felt everything I did was an effort
3. My sleep was restless
4. I was happy (R)
5. I felt lonely
6. People were unfriendly
7. I enjoyed life (R)
8. I felt sad
9. I felt that people disliked me
10. I could not get "going"

Poly drug use

Please indicate which of the following you have used in the past 3 months (please check all that apply): Methamphetamine, cocaine, crack, MDMA/ecstasy, ketamine, marijuana/weed, nitrate inhalants (poppers)
(Poly drug use will be defined as the use of three or more of these recreational drugs)

Intimate partner violence

Modified version of the Conflict Tactics Scale – version used by Greenwood, Refl, Huang, Pollack, Canchola, Jesse, and Catania (2002)
In the past 5 years, have you experienced any of the following? (Please check all that apply)

Psychological/symbolic battering

1. I have been verbally threatened by a partner
2. I have been demeaned in front of others by a partner
3. I have been ridiculed for my appearance by a partner
4. I have been forced to get high or drunk by a partner
5. I have been stalked by a partner
6. I have had property destroyed or damaged by a partner

Physical battering

7. I have been hit with fists or an open hand by a partner
8. I have been hit with an object by a partner
9. I have been pushed or shoved or kicked by a partner
10. I have had something thrown at me by a partner

Sexual battering

11. I have been forced to have sex by a partner

Childhood sexual abuse

Have you ever had a nonconsensual sexual experience where you were forced or frightened by someone into doing something sexually (e.g., sexual assault, rape, sexual abuse, sexual victimization, sexual violence, sexual exploitation, etc.)?

a) Yes, as an adult (after I turned 18)
b) Yes, as a(n) child/adolescent (before I turned 18)
c) Yes, as an adult AND as a(n) child/adolescent
d) No
e) Unsure

Appendix E

Demographic Questionnaire for Study 1:

Screening Items

Before we begin, we would like to ask you some questions about yourself, to see if you are eligible for this study. Please answer the following questions truthfully and to the best of your ability.

1. How old are you? _____
2. How do you primarily identify, in terms of gender?
   Woman (Cis-female: gender matches your sex at birth, not transgender); Man (Cis-male: gender matches your sex at birth, not transgender); Transwoman; Transman ;Other
3. What is your relationship status?
   Single; In a new/casual relationship; In a long-term monogamous relationship (less than 1 year); In a long-term monogamous relationship (1 year or longer); Common-law / Married
4. Have you ever engaged in consensual penetrative sexual intercourse (i.e., penis in vagina AND/OR penis in butt)? Yes / No
5. What is your sexual relationship status?
   Not having sexual relations; Having sex, but do not have an exclusive sex partner; In an exclusive relationship with one person, with no outside sex partners; In an exclusive relationship with one person, with outside sex partners
6. What is your sexual preference?
   Men; Women; Both; Neither

Demographics - *Please answer the following questions to the best of your ability***:**

1. How would you characterize your ethic/racial background?: White / Caucasian, Aboriginal (First Nation (North American Indian), Inuk (Inuit), or Metis), South Asian (e.g. East Indian, Pakistani, Sri-Lankan, etc.), Chinese, Black (e.g. African, Caribbean, Black, etc.), Filipino, Latin American, Arab, Southeast Asian (e.g. Vietnamese, Cambodian, Malaysian, Laotian, etc.), West Asian (e.g. Iranian, Afgan, etc.), Korean, Japanese, Other, please specify
2. What is your current country of residence? [Drop down menu to be auto-populated by *FluidSurveys*]
3. What religion do you identify with, if any? ____
4. How old were you when you had your first consensual sexual encounter (penetrative vaginal or anal sex with a partner)? ____
5. How long ago was your last sexual encounter (consensual penetrative vaginal/anal sex with another person)? Within the last 7 days, Within the last 14 days, Within the last 30 days, Within the last 3 months, Within the last 6 months, Within the last 12 months, Over a year ago, Over 2 years ago, Over 5 years ago, Other, Never.
6. During your last sexual encounter (consensual penetrative vaginal/anal sex with another person) was a barrier contraceptive – like a condom – used? Yes, No, Not Sure
7. How many times have you had sex (consensual penetrative vaginal/anal sex with another person) in the past 3 months?
8. Of the sexual encounters you counted above, on how many of these occasions did you not use a condom?
9. During how many of your sexual encounters in the past 3 months (consensual penetrative vaginal/anal sex) did you use a condom **for only part** of the encounter? (i.e. where you took the condom off after starting to have sex and continued without one OR where you started having sex without a condom and then stopped to apply one and continued with it on)
10. During the past three months, how often did you use a barrier contraceptive – like a condom – during sexual encounters (consensual penetrative vaginal/anal sex with another person)? 1- Never, 2- Rarely, 3, 4 - Sometimes, 5, 6 - Most of the time, 7 - Always, Not Applicable - I have not had sex in the past 3 months

Appendix F

Mood Scale -adapted from Mayer and Gaschke (1988)'s Brief Mood Introspection Scale (to be administered via computer display) – For Experiment 1.

On the following scale please indicate how happy you currently feel (1 being not at all happy and 10 being the most happy you've ever felt)

LEAST HAPPY | 1 2 3 4 5 6 7 8 9 10 | MOST HAPPY

On the following scale please indicate how sad you currently feel (1 being not at all sad and 10 being the most sad you've ever felt)

LEAST SAD | 1 2 3 4 5 6 7 8 9 10 | MOST SAD

On the following scale please indicate how bored you currently feel (1 being not at all bored and 10 being the most bored you've ever felt)

LEAST BORED | 1 2 3 4 5 6 7 8 9 10 | MOST BORED

On the following scale please indicate how sexually aroused you currently feel (1 being not at all sexually aroused and 10 being the most sexually aroused you've ever felt)

LEAST SEXUALLY AROUSED | 1 2 3 4 5 6 7 8 9 10 | MOST SEXUALLY AROUSED

Appendix G

Familiar partner, unfamiliar partner, and distracter scenario items for Study 1.

Instruction to participants: For each item please indicate how much you agree or disagree with each statement on a scale of 1 – 10: where 1 = strongly disagree and 10 = strongly agree.

Males

Well-known partner items

1. It's a Friday night and you've invited over a small group of friends for a movie night, including, Sam, a female friend that you've been attracted to for a while. In the past you two have flirted a little, but nothing has really developed yet romantically. That night, after the movie, most of your friends return home, but she stays to chat. Before long, chatting has turned to flirting, and you make a move to kiss her. She returns your kiss and after making out for a while, you can tell that the two of you are likely going to have sex. The moment comes when you are both mostly undressed and you realize that neither of you has a condom. What will you do?
    a. I would suggest having sex without a condom tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    b. I would suggest leaving to get condoms from a pharmacy ten minutes away
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    c. How concerned would you be that Sam might change her mind about having sex with you during the delay while you get a condom?
    (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

2. You and Naomi have been dating for a few weeks and seem to be connecting really well. You've made out together a few times already, but tonight seems special, you two deicide to "take it to the next level" and have sex. However, neither of you has a condom and you know that the nearest convenience store is closed. Naomi tells you that it's okay; she's ok with having sex without a condom tonight because she's on the pill and she trusts you. What will you do?
    a. I would go ahead and have sex with Naomi without a condom tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    b. I would attempt to convince Naomi to wait for sex until we can get a condom.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    c. How concerned are you that refusing sex without a condom tonight might jeopardize your relationship with Naomi?
    (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

3. You've been assigned a partner project in one of your classes. Luckily, you were able to pair up with Maya. The two of you know each other from high school and you've been friendly with each other since the beginning of the semester. She invites you over to work on the project and, over the course of the night, you two begin flirting. Eventually your flirting progresses to kissing, which then progresses to groping and the removal of some clothing. You can tell that you two are going to end up having sex and that she's really into it, but she hasn't brought up the issue of using a condom. What will you do?
    a. I would be the first to suggest that we use a condom tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    b. I would not say anything and have sex with Maya without using a condom tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    c. How concerned are you that bringing up using a condom might ruin the mood with Maya?
    (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned

4. At a party you run into your ex girlfriend Hana, who has just moved back into town. Your breakup was on friendly terms and you've each dated other people since, but you are both single

now and there is definitely still an attraction between you. The two of you spend a long time talking during the party and it starts to feel just like old times; you both wonder why you two ever broke up. Hana comes back to your place and you two begin kissing and touching each other. You can tell that she likes what you're doing, and you feel the same. When the moment seems right, you reach over to take a condom out of your bedside drawer. Before you can put it on though, Hana asks if you two could have sex without a condom, because that's how she's always preferred it with you. What will you do?

a. I would go ahead and have sex without a condom tonight.
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
b. I would attempt to convince Naomi to use a condom with me tonight.
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
c. How concerned are you that insisting on using a condom tonight might jeopardize your chances of having sex with Hana?
   (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

Unknown Partner Items

1. On a whim, you decide to go on a blind date with Anna, who you met through a dating website. The date goes very well and you return very late at night to her place for coffee. Coffee then turns into kissing, which turns into taking off each other's clothes. Just then, you both realize that neither of you has a condom. Anna tells you not to worry about it, she tells you that she trusts that you're clean and she's on the pill. What will you do?
   a. I would go ahead and have sex with Anna without a condom tonight
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I would ask Anna to wait for sex until we can get a condom.
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   c. How concerned would you be that asking Anna to wait for sex tonight might jeopardize your chances of ever having sex with her?
      (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

2. You and your friends go out to check out a new club on a Saturday night. The place has a good ambiance and the DJ is playing your favourite tunes. An attractive woman at the dance club comes up to you and dances with you for a few songs. You dance together provocatively, grinding and making out on the dance floor. In between songs, you chat and discover that her name is Julie and that you both have a lot in common. After a while she invites you to come home with her to have sex. Once there, you offer to use a condom but she says that with you she'd prefer sex without a condom, because it will feel sexier having skin-to-skin contact. What will you do?
   a. I would agree to have sex with her without using a condom.
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I would attempt to convince her to have sex using a condom tonight.
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   c. How concerned are you that this woman might turn down having sex with you completely if you refuse to have sex without a condom?
      (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

3. Your friend introduces you to their new co-worker, Sarah, at a party. You two hit it off and begin chatting and flirting; it's obvious that there's a sexual chemistry between you two. You take her back to your place where you begin to make out. She says she really wants to have sex with you tonight, but only if you have a condom – which you don't. What will you do?
   a. I would suggest that we have sex without using a condom tonight.
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I would suggest going to get condoms from a nearby pharmacy so that we can have sex tonight.
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)

c. How concerned are you that Sarah might change her mind about having sex during the delay, while you went to get condoms?
(Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

4. Your roommate, Ben, has his girlfriend, Tammy, visit and she brings along her brand new roommate, Iris. You and Iris find that you have a lot in common, including a mutual attraction to each other. On their first evening in town, while Ben and Tammy are out for the evening, you and Iris decide to watch TV together. During the TV show, the flirting between you two starts to get physical and you decide to take Iris to your bedroom, where you two can be more intimate. Clothes are coming off and things are getting more physical; it's obvious that you two are going to end up having sex, but neither of you has brought up using a condom tonight. What will you do?
    a. I would not bring up using a condom; if she doesn't bring it up, we would have sex tonight without using a condom
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    b. I would bring up using a condom tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    c. How concerned are you that bringing up using a condom might ruin the mood with Iris tonight?
    (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

Females

Questions regarding safe sex decision-making

Well-known partner items

1. It's a Friday night and you've invited over a small group of friends for a movie night, including, Ben, a male friend that you've been attracted to for a while. In the past you two have flirted a little, but nothing has really developed yet romantically. That night, after the movie, most of your friends return home, but he stays to chat. Before long, chatting has turned to flirting, and you make a move to kiss him. He returns your kiss and after making out for a while, you can tell that the two of you are likely going to have sex. The moment comes when you are both mostly undressed and you realize that neither of you has a condom. What will you do?
    a. I would suggest having sex without a condom tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    b. I would suggest leaving to get condoms from a pharmacy ten minutes away
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    c. How concerned would you be that he might change his mind about having sex with you during the delay while you went to get a condom?
    ((Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned))

2. You and Tomas have been dating for a few weeks and seem to be connecting really well. You've made out a few times already, but tonight seems special, you two deicide to "take it to the next level" and have sex. However, neither of you has a condom and you know that the nearest convenience store is closed. Tomas tells you that it's okay, he's ok having sex without a condom tonight because you're on the pill and he trusts you. What will you do?
    a. I would go ahead and have sex with Tomas without a condom tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    b. I would attempt to convince Tomas to wait for sex until we can get a condom.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    c. How concerned are you that refusing sex without a condom tonight might jeopardize your relationship with Tomas?
    (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

3. You've been assigned a partner project in one of your classes. Luckily, you were able to pair up with Marius. You know each other from high school and you've been friendly since the beginning of the semester. He invites you over to work on the project and, over the course of the night, the two of you begin flirting. Eventually, your flirting progresses to kissing, which then progresses to groping and the removal of some clothing. You can tell that you two are going to end up having sex and that he's really into it, but he hasn't brought up the issue of using a condom. What will you do?
    a. I would be the first to suggest that we use a condom tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    b. I would not say anything and have sex with Marius without using a condom tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    c. How concerned are you that bringing up using a condom might ruin the mood with Marius?
    (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

4. At a party you run into your ex boyfriend David, who has just moved back into town. Your breakup was on friendly terms and you've each dated other people since, but you are both single now and there is definitely still an attraction between you. The two of you spend a long time talking during the party and it starts to feel just like old times; you both wonder why you two ever broke up. David comes back to your place and you two begin kissing and touching each other. You can tell that he likes what you're doing, and you feel the same. When the moment seems right, you reach over to take a condom out of your bedside drawer. Before you can put it on though, David asks if you two could have sex without a condom, because that's how he's always preferred it with you. What will you do?
    a. I would go ahead and have sex without a condom tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    b. I would attempt to convince David to use a condom with me tonight.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    c. How concerned are you that insisting on using a condom tonight might jeopardize your chances of having sex with David?
    (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

Unknown Partner Items

5. On a whim, you decide to go on a blind date with Eddi, who you met through a dating website. The date goes very well and you return very late at night to his place for coffee. Coffee then turns into kissing, which turns into taking off each other's clothes. Just then, you both realize that neither of you has a condom. Eddi tells you not to worry about it, he tells you that he trusts that you're clean and you've already said that you're on the pill. What will you do?
    a. I would go ahead and have sex with Eddi without using a condom tonight
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    b. I would ask Eddi to wait for sex until we can get a condom.
    (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
    c. How concerned would you be that asking Eddi to wait for sex tonight might jeopardize your chances of ever having sex with him?
    (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

6. You and your friends go out to check out a new club on a Saturday night. The place has a good ambiance and the DJ is playing your favourite tunes. An attractive man at the dance club comes up to you and dances with you for a few songs. You dance together provocatively, grinding and making out on the dance floor. In between songs, you chat and discover that his name is James and you both have a lot in common. After a while he invites you to come home with him to have sex. Once there, you offer to use a condom but he says that with you he'd prefer sex without a condom, because it will feel sexier having skin-to-skin contact. What will you do?

a. I would agree to have sex with him without using a condom.
(Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
b. I would attempt to convince him to have sex using a condom tonight.
(Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
c. How concerned are you that this man might turn down having sex with you completely if you refuse to have sex without a condom?
(Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

7. Your friend introduces you to their new co-worker, Samson, at a party. You two hit it off and begin chatting and flirting; it's obvious that there's a sexual chemistry between you two. You take him back to your place where you begin to make out. He says he really wants to have sex with you tonight, but only if you have a condom – which you don't. What will you do?
   a. I would suggest that we have sex without using a condom tonight.
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I would suggest going to get condoms from a nearby pharmacy so that we can have sex tonight.
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   c. How concerned are you that Samson might change his mind about having sex during the delay, while you went to get condoms?
   (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

8. Your roommate, Amy, has her boyfriend, Tony, visit, and he brings along his brand new roommate Milo. You and Milo find that you have a lot in common, including a mutual attraction to each other. On their first evening in town, while Amy and Tony are out for the evening, you and Milo decide to watch tv together. During the tv show, the flirting between you two starts to get physical and you decide to take Milo to your bedroom, where you two can be more intimate. Clothes are coming off and things are getting more physical; it's obvious that you two are going to end up having sex, but neither of you have brought up using a condom tonight. What will you do?
   a. I would not bring up using a condom; if he doesn't bring it up, we would have sex tonight without using a condom.
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I would bring up using a condom tonight.
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   c. How concerned are you that bringing up using a condom might ruin the mood with Milo?
   (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

Distracter Questions – for both genders:

1. You are walking on campus on a break between classes. On the sidewalk in front of you, you see a wallet; you pick it up and find $50 inside as well as the ID of man that you do not recognise. You look around and find that, for once, there isn't anyone nearby you. You think to yourself that this $50 could buy you lunch for the rest of the week. What will you do?
   a. I would remove and keep the cash inside the wallet before turning it in to the campus police.
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I would leave the wallet, as it is, where I found it.
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   c. How concerned would you be about what your friends would think if they knew you didn't return a found wallet intact?
   (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

2. You are at a house party with friends and have drunk quite a lot of alcohol. It's been a long week and you suddenly feel very tired. You'd like to go home and creep your ex on facebook before crashing for the night. You decide to leave, but your friends say they want to stay for another hour

or two. You really don't want to wait for your friends and tell them so. They tell you that you are free to walk home alone if you want; it's only 20 minutes away. What will you do?

a. I would leave when I want and walk home alone
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
b. I would wait for my friends
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
c. How concerned would you be for your safety if you chose to walk home alone?
   (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

3. During an exam you happen to notice that you can clearly see the test paper of the student sitting closest to you. You recognise this student from class and recall that they seemed very knowledgeable. This course has been very difficult for you and you've felt a little overloaded this semester. The grade you get on this exam will decide whether you pass or fail this course and you're concerned about keeping your academic scholarship. What will you do?
   a. I would copy some of this student's answers
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I would avert my eyes and focus on my own work
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   c. How concerned would you be about getting caught peeking at another student's answers?
      (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

4. You are out at a local pub having drinks with a group of your close friends. You happen to notice another group of drinkers nearby, who are a little rowdy. They have obviously had quite a few pitchers of beer. As you pass one of them, he stumbles drunkenly and accidentally sloshes his beer all over the sleeve of your shirt. Not too long after this, you decide to leave. Coincidentally, the guy who spilled his drink on you is leaving at the same time. You see him take out his car key and stumble towards his car. What will you do?
   a. I would carry on my way home; his choices are none of my concern.
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I would attempt to stop this man from driving drunk and attempt to convince him to take a cab instead.
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   c. How concerned would you be that your friends might think badly of you for not preventing a stranger from driving drunk?
      (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

5. It's nearing the end of term and you and your roommate are both pretty stressed out, trying to complete end of term papers and prepare for exams. Your roommate in particular, you know, has been having a very difficult time with one of his courses, taught by a professor with a reputation for favouring certain students – your roommate is not one of these lucky few. One night your roommate confesses that he has hired someone online to write his final paper for him, in the hopes that this will help him pass the course. What will you do?
   a. I would encourage my roommate to take this action, he needs a good grade and the professor is obviously unfair.
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I would try to convince my roommate not to take this action, because it's not right to cheat.
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   c. How concerned would you be about the consequences for your roommate if he is caught cheating on his paper?
      (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

6. While your friend Taylor is out of town for the week, you agree to take care of her pet fish. It's not a particularly rare fish, but your friend has become very attached to it and asks you to be very careful with it. You follow Taylor's instructions to the letter, but one morning, when you get out of bed, you feel an unusual squish on the floor. Looking down, you realize that the fish jumped out

of its bowl during the night and is now very dead. You carefully dispose of the fish and try to figure out how you will break the news to your friend. You know this will devastate Taylor; but then, you come up with a brilliant idea. You could easily go to a nearby pet store and just buy a replacement fish, Taylor will never have to know that anything happened to his fish! What will you do?

a. I would replace the fish and hope that Taylor never noticed it was a new fish
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
b. I would confess to Taylor that the fish died
   (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 strongly agree)
c. How concerned would you be that Taylor might find out you replaced the fish and end your friendship?
   (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

7. You've been looking forward to your date this Saturday for about a week now. Planning out every little detail in your mind, down to the outfit you'll wear. However, on Saturday night, when you go to look for your outfit in the closet, you realise that you forgot to clean it after the last time you wore it and it's got a big stain – it's unwearable and you have no time to clean it. But, you do know that your roommate has a great outfit that would make a perfect last minute substitution. Your roommate is out of town and has no cell service, but the outfit you want is in their closet. You could borrow it and return it without them ever knowing you had done so. What will you to?
   a. I would borrow my roommate's clothes without asking
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I would try to come up with something else to wear
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   c. How concerned would you be that borrowing your roommate's clothes without asking might negatively impact your relationship if they found out?
      (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

8. It's the end of term and you're writing your last final exam. You studied hard for this test because you knew this was a very difficult course and that it would be very important to get a good grade on the final exam. Everyone showed up to the exam looking sweaty and stressed out, but now that you've started filling in answers, you're starting to feel more confident; it turns out you were well prepared for this exam. You look up from your paper to check the time and happen to notice, out of the corner of your eye, that the student next to you is leaning a little too close to your desk. You catch their eye and they give you a sheepish look and motion that they would like you to move your paper over so they can get a better view. What will you do?
   a. I will move my paper into view, as long as I pass, who cares if someone else wants to cheat?
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   b. I will move my paper out of view, why should I let someone else take advantage of my hard work?
      (Strongly disagree) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (strongly agree)
   c. How concerned would you be that you might both get in trouble if this student is caught cheating from your exam?
      (Not at all concerned) 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 (extremely concerned)

Appendix H

Film clip rating and ranking – manipulation check for Study 1:

Please answer the following questions to the best of your ability

1. On a scale of 1 to 10, please rate how entertaining you found each video clip to be:
    a. [*Title/image for clip1*]_____
    b. [*Title/image for clip2*]_____
    c. [*Title/image for clip3*]_____
    d. [*Title/image for clip4*]_____

2. On a scale of 1 to 10, please rate how sexually arousing you found each video clip to be:
    a. [*Title/image for clip1*]_____
    b. [*Title/image for clip2*]_____
    c. [*Title/image for clip3*]_____
    d. [*Title/image for clip4*]_____

3. On a scale of 1 to 10, please rate how boring you found each video clip to be:
    a. [*Title/image for clip1*]_____
    b. [*Title/image for clip2*]_____
    c. [*Title/image for clip3*]_____
    d. [*Title/image for clip4*]_____

4. Please arrange the video clips in order from MOST to LEAST preferred:

5. Please arrange the video clips in order from MOST to LEAST sexually arousing (presented for experimental group only):

Appendix I

Demographic Questionnaire for Study 2:

Please indicate:

1. Your age: ___
2. Your gender: Female, Male, Transwoman; Transman; Gender queer; Other
3. Your current year of study: 1st, 2nd, 3rd, 4th.
4. Your current relationship status: single (not married or currently partnered), in a new/casual relationship, in a long-term monogamous relationship (1yr+), common-law, married.
5. Your sexual relationship status: Not having sexual relations; Having sex, but do not have an exclusive sex partner; In an exclusive relationship with one person, with no outside sex partners; In an exclusive relationship with one person, with outside sex partners.
6. Your sexual preference: Men, Women, Both, Neither.
7. How would you characterize your ethic/racial background?: White / Caucasian, Aboriginal (First Nation (North American Indian), Inuk (Inuit), or Metis), South Asian (e.g. East Indian, Pakistani, Sri-Lankan, etc.), Chinese, Black (e.g. African, Caribbean, Black, etc.), Filipino, Latin American, Arab, Southeast Asian (e.g. Vietnamese, Cambodian, Malaysian, Laotian, etc.), West Asian (e.g. Iranian, Afgan, etc.), Korean, Japanese, Other, please specify
8. What religion do you identify with, if any? ____
9. How old were you when you had your first consensual sexual encounter (penetrative vaginal or anal sex with a partner)? ____
10. How long ago was your last sexual encounter (consensual penetrative vaginal/anal sex with another person)? Within the last 7 days, Within the last 14 days, Within the last 30 days, Within the last 3 months, Within the last 6 months, Within the last 12 months, Over a year ago, Over 2 years ago, Over 5 years ago, Other, Never.
11. During your last sexual encounter (consensual penetrative vaginal/anal sex with another person) was a barrier contraceptive – like a condom – used? Yes, No, Not Sure
12. How many times have you had sex (consensual penetrative vaginal/anal sex with another person) in the past 3 months?
13. Of the sexual encounters you counted above, on how many of these occasions did you **not** use a condom?
14. During how many of your sexual encounters in the past 3 months (consensual penetrative vaginal/anal sex) did you use a condom **for only part** of the encounter? (i.e. where you took the condom off after starting to have sex and continued without one OR where you started having sex without a condom and then stopped to apply one and continued with it on)
15. During the past three months, how often did you use a barrier contraceptive – like a condom – during sexual encounters (consensual penetrative vaginal/anal sex with another person)? 1- Never, 2- Rarely, 3, 4 - Sometimes, 5, 6 - Most of the time, 7 - Always, Not Applicable - I have not had sex in the past 3 months
16. When was the last time you were tested for any kind of sexually transmitted infection? Within the past month, Within the past 3 months, Within the past 6 months, Within the past year, Within the past year and half, Within the past 2 years, Within the past 3 years, Within the past 5 years, More than 5 years ago, I have not yet been tested, decline.
17. Have you ever tested positive for any kind of sexually transmitted infection (Chlamydia, Gonorrhea, Syphilis, Trichomoniasis, etc)? Yes, No, Not Sure, decline.
18. Have you ever tested positive for HIV? Yes, No, Not Sure, decline.

VITA AUCTORIS

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